

# Simon Fraser University Calendar 2009 • 2010

<http://students.sfu.ca/calendar>

Beginning 2010/2011, only a web version of the Simon Fraser University Calendar will be produced.

Demand for the print version has steadily decreased over the years. Focussing solely on further development of a web-based Calendar reduces paper consumption, enables more effective resource deployment, and better serves our primary audience of undergraduate and graduate students.

I will keep the University community apprised of on-going improvements to the web-based Calendar.

*Kate Ross*  
Registrar and Senior Director, Student Enrolment

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## Enrolment Limitations

It should be carefully noted that possession of the minimum requirements does not in itself guarantee admission to any course, program, department or faculty at the University. In those instances where the number of qualified applicants exceeds the number that, in the opinion of the University, can be accommodated, the University reserves the right to select the quota from among the qualified applicants. Address all enquiries to: Enrolment Services, Simon Fraser University, 8888 University Drive, Burnaby, BC, V5A 1S6, Canada.

## Protection of Privacy

Simon Fraser University collects and retains student and alumni personal information under the authority of the University Act [R.S.B.C. 1996, c.468, s. 27(4)(a)]. The information is related directly to and needed by the University for the purposes of admission, enrolment, graduation and other activities related to its programs, being a member of the Simon Fraser University community and attending a public post-secondary institution in the Province of British Columbia.

The information will be used to admit, enrol and graduate students, record academic achievement, issue library cards and transit passes and administer and operate academic, athletic, recreational, residences, alumni and other University programs.

Information on admission, enrolment and academic achievement may also be disclosed and used for statistical and research purposes by the University, other post-secondary educational institutions and the provincial government.

## Disclosure of Personal Information to the BC University Student Outcomes Project

Each year, the BC University Student Outcomes Project gathers student outcomes information from graduates of BC's universities in collaboration with The University Presidents Council (TUPC) and the Ministry of Advanced Education. Each BC university provides to the University Student Outcomes Project student identification information (student's name, student ID number), student contact information (address and telephone number), student demographic characteristics and academic program information. The information is used by the project to contact BC university graduates to conduct voluntary telephone surveys two and five years after graduation.

Survey participants are asked to report their level of program satisfaction, degree of skill development, education financing and debt load, participation in further education, and employment outcomes. The information gathered by the survey is summarized in aggregate form without identifying individual students. The data is used to meet the demand for university accountability at the system level in BC; to gather timely and relevant data for use in program evaluation and planning processes; and to ensure that new, continuing and prospective students are provided with information they can use to help them make informed career decisions.

Personal information provided for admission and enrolment and any other information placed into the student record will be collected, protected, used, disclosed and retained in compliance with British Columbia's *Freedom of Information and Protection of Privacy Act* (R.S.B.C. 1996, c. 165).

## Disclosure of Personal Information to Student Societies

In addition to collecting personal information for its own purposes, the University collects specific and limited personal information on behalf of the Simon

Fraser Student Society and the Graduate Student Society. The societies use this information for the purpose of membership administration, elections, annual general meetings, special general meetings and its health plans. The University discloses the personal information to the student society only for those purposes. Please contact the student society general office if you have any questions about its collection, use and disclosure of the information.

If you have any questions about the collection, use and disclosure of your personal information by the University, please contact the Registrar, MBC 3300, Simon Fraser University, 8888 University Drive, Burnaby, BC V5A 1S6; 778.782.3111.

## Photography on Campus

From time to time students, staff, faculty and guests at Simon Fraser University may be photographed in non-public areas (i.e. classrooms, private offices, in studio, meeting rooms, etc.) by University photographers. In this notice 'photography' includes still, video and film photography. The University has the authority under the University Act (R.S.B.C. 1996, c.468, s. 27(4)(a)), to collect personal information in the form of photographs. Such photographs are related directly to and needed by the University for educational, recruitment and promotional purposes. The photographs may be used and disclosed at the University's discretion and included in the University calendar, websites, newsletters, bulletins, brochures, advertisements, annual reports, supplements, displays, reports and other publications including off-campus news media. In addition, the photograph may be placed in the University's Image Library which is a collection of photographs available for sale (<http://lidsc-imagelib.lidsc.sfu.ca/>). If you do not wish to be photographed in a non-public area, please inform the photographer before he/she begins taking photographs. If you allow yourself to be photographed in a non-public area you are giving the University your consent regarding its collection, use and disclosure of the photograph.

The above notice does not apply to individuals photographed in open, public areas where there is no expectation of privacy (i.e. Convocation Mall, cafeterias, public walkways, concourses, etc.). Photographs taken in public areas may be used and disclosed at the University's discretion.

If you have any questions about photography on campus or the University's collection, use and disclosure of photographs, please contact the manager, Media Production Group, Learning and Instructional Development Centre at 778.782.3092.

## Notification of Disclosure of Personal Information to Statistics Canada

Statistics Canada is the national statistical agency. As such, Statistics Canada carries out hundreds of surveys each year on a wide range of matters, including education.

It is essential to be able to follow students across time and institutions to understand, for example, the factors affecting enrolment demand at post-secondary institutions. The increased emphasis on accountability for public investment means that it is also important to understand outcomes. In order to carry out such studies, Statistics Canada asks all colleges and universities to provide data on students and graduates. Institutions collect and provide to Statistics Canada student identification information (student's name, student ID number, social insurance number), student contact information (address and telephone number), student demographic characteristics, enrolment information, previous education, and labor activity.

The federal Statistics Act provides the legal authority for Statistics Canada to obtain access to personal information held by educational institutions. The information may be used only for statistical purposes, and the confidentiality provisions of the Statistics Act prevent the information from being released in any way that would identify a student.

Students who do not wish to have their information used are able to ask Statistics Canada to remove their identification and contact information from the national database.

Further information, about the use of this information, can be obtained from Statistics Canada's web site [www.statcan.gc.ca](http://www.statcan.gc.ca).

## Calendar Changes and Corrections

The Board of Governors and the Senate of Simon Fraser University reserve the right to make changes in this Calendar without prior notice. This Calendar is printed to provide students and others with information about Simon Fraser University. The University considers this Calendar to be accurate at the time of printing. In the event of errors, the actual courses, curricula, policies, procedures, regulations and requirements in effect will prevail over the provisions printed in the Calendar. In addition, the policies, procedures, programs, regulations and requirements are constantly being reviewed and revised. Any such revision may be made by Simon Fraser University without notice and shall take effect at the time of the revision unless a later date is specified when the revision is adopted. Simon Fraser University will endeavor to give the University community as much notice of the revision as it considers the circumstances permit, and will endeavor to incorporate the revision in the next version of the Calendar. Revisions include additions, cancellations and deletions as well as changes.

## Calendar Distribution

The Calendar is available on the web, in both HTML and PDF formats, at <http://students.sfu.ca/calendar>. An errata list citing recent updates is on that website.

Enrolled Simon Fraser University students are entitled to one free printed Calendar each year, available for in-person pick-up at the SFU Bookstore (Burnaby campus), and at Information and Registration Services (Simon Fraser University Vancouver and also Simon Fraser University Surrey).

To receive a Calendar in the mail, send a request along with full payment to: Calendar Orders, SFU Bookstore, Simon Fraser University, 8888 University Drive, Burnaby, BC V5A 1S6, Canada.

The following costs apply: \$8.40 for an address within BC, \$12.60 for an address within the rest of North America, and \$31.50 for an international address. Acceptable forms of payment are Visa, MasterCard, American Express, and money orders in Canadian funds.

The Calendar is distributed to many universities, colleges, secondary schools and public libraries in BC, and to all Canadian universities.

## Calendar Production

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# History of Simon Fraser University

The University is named after Simon Fraser, Loyalist, fur-trader and explorer, who in 1808 completed one of the greatest journeys in the annals of Canadian history by descending the mighty river which today bears his name. The Fraser family coat of arms forms the basis of the University's coat of arms which appears on the title page of this Calendar. The colors of Simon Fraser University are red and blue.

In January 1963 a report entitled Higher Education in British Columbia and a Plan for the Future, by Dr. J.B. Macdonald, recommended the creation of a new university in the Lower Mainland. Two months later the establishment of Simon Fraser University received formal assent in the British Columbia Legislature, and in May of the same year Dr. Gordon M. Shrum was appointed Chancellor.

From a variety of sites which were offered, the Chancellor recommended to the Provincial Government that the top of 1200 foot Burnaby Mountain be selected for the new university. Lying east of Vancouver, the site commands magnificent views of Burrard Inlet, the mountains, the Fraser River and Vancouver Harbor.

Architects were invited to compete in the design of the overall campus. The Vancouver firm of Erickson/Massey won the competition, and the four architects who had been runners-up in the competition each designed at least one building within the overall plan. The outstanding architecture has won many awards.

Construction began in the spring of 1964 and eighteen months later, on September 9, 1965, Simon Fraser University opened to 2,500 students.

Since those early years the University has grown substantially. In September 2008, 27,081 students

were enrolled in courses. At the June 2008 Convocation ceremonies 3,611 credentials were conferred, while at the University's October Convocation, 2,132 students received their credentials.

## Simon Fraser University Vancouver

First established in 1980 in a storefront classroom on Howe Street, the Simon Fraser University Harbour Centre site opened in 1989, the result of a close collaboration of the University and the business, professional and cultural communities, the City of Vancouver and the Province of British Columbia. This association has grown as the University continues to seek the advice and participation of the downtown community in the development of its mission and programs.

The campus in downtown Vancouver now comprises the headquarters at Harbour Centre, the Morris J. Wosk Centre for Dialogue, the School for Contemporary Arts studios at 611 Alexander and the Segal Graduate School of Business. Built largely through private sector funding, the Vancouver campus offers a range of programs and services directed to mid-career intellectual and professional growth, providing continuity between work and study within an environment created specifically for advanced learning and specialized graduate and undergraduate programs. Researchers at the downtown campus benefit from their proximity to others engaged in research in the urban community.

With over 27,000 square meters of space, the campus currently serves approximately 5,000 non-credit, Continuing Studies students annually. Each term approximately 2,200 undergraduates and 600 graduate students complete credit courses, and

thousands of individuals, groups and companies attend public programs, or use the campus for community, corporate and other meetings.

In 2010 the School for the Contemporary Arts will move its Burnaby campus programs to the Vancouver campus and will occupy a dynamic new 11,000 square metre facility on the redeveloped Woodward's site.

## Simon Fraser University Surrey

Simon Fraser University Surrey is one of BC's leading university campuses for study and research. Offering distinctive nationally and internationally acclaimed programs, Simon Fraser University Surrey promotes student success with a high quality learning environment based on innovative teaching approaches, small class sizes, and a vibrant research community. The campus, which opened its doors in September 2002, is located adjacent to the Surrey Central SkyTrain station at King George Highway and 102nd Avenue. Undergraduate programs in the Faculties of Applied Sciences; Arts and Social Sciences; Business Administration; Communication, Art and Technology; Education; and Science are being offered. Additionally, graduate programs are being offered in the Faculties of Applied Sciences, Education, Arts and Social Sciences, Communications, Art and Technology, and Science.

Continuing Studies programs are also offered. More than 3,000 undergraduate and graduate students are enrolled in these and many other Surrey programs.

The new campus occupies 21,500 square metres in the stunning facility, which was designed by renowned architect Bing Thom.

# University Telephone Numbers

main switchboard for all campuses 778.782.3111

<b>Burnaby Mountain Campus</b>	<i>Telephone</i>	<i>Fax</i>
Campus Security	778.782.3100	
Parking	778.782.5534	778.782.5386
Security (24 hours)	778.782.3100	778.782.3469
Winter Road Conditions	604.444.4929	
Faculty of Applied Sciences	778.782.4724	778.782.5802
Faculty of Arts and Social Sciences	778.782.4414	778.782.3033
Faculty of Business Administration	778.782.3708	778.782.4920
Faculty of Communication, Art and Technology	778.782.8790	778.782.8789
Faculty of Education	778.782.3395	778.782.3203
Faculty of Environment	778.782.8787	778.782.8788
Faculty of Health Sciences	778.782.4821	778.782.5927
Faculty of Science	778.782.4590	778.782.3424
Graduate Student Society	778.782.3899	778.782.6594
Graduate Studies		
Student Admission, Registration, Records	778.782.3042	778.782.3080
Health and Counselling Centre	778.782.4615	778.782.5781
Human Rights Office	778.782.4446	778.782.5468
Library, W.A.C. Bennett	778.782.3869	778.782.3023
Ombuds Officers	778.782.4563	778.782.5843
President's Office	778.782.4641	778.782.4860
SFU Bookstore	778.782.3656	778.782.3401
Simon Fraser Student Society	778.782.3181	778.782.5843
Student and Registrar Services		778.782.4969
Registrar and Information Services	778.782.4356	
Academic Advising	778.782.4356	
Admissions	778.782.4356	
Campus Tours	778.782.5620	
Financial Aid and Awards	778.782.4356	
Student Information System Help	778.782.6930	
Student Recruitment	778.782.3397	
U-Pass Office	778.782.6805	
Switchboard	778.782.3111	778.782.4242

<b>Simon Fraser University Surrey</b>	<i>Telephone</i>	<i>Fax</i>
External Relations	778.782.7408	778.782.7485
Library	778.782.7411	778.782.7420
Security	778.782.7511	778.782.7488
SFU Bookstore	778.782.7537	778.782.5219
Student and Registrar Services	778.782.7400	778.782.7403

<b>Simon Fraser University Vancouver</b>	<i>Telephone</i>	<i>Fax</i>
Administration	778.782.5010	778.782.5008
Health and Counselling Centre	778.782.5200	778.782.5025
Library, Belzberg	778.782.5050	778.782.5052
Meeting and Event Services	778.782.5800	778.782.5060
Morris J. Wosk Centre for Dialogue	778.782.5800	778.782.5818
Public Affairs and Media Relations	778.782.5151	778.782.5098
Security	778.782.5029	778.782.7910
Segal Graduate School of Business	778.782.5800	778.782.5818
SFU Bookstore	778.782.5048	778.782.5219
Student and Registrar Services	778.782.5000	778.782.5060

# Programs Offered

## Undergraduate Programs

Simon Fraser University offers three main types of undergraduate programs: honors programs leading to an **honors degree**, general programs leading to a **general degree**, and an **extended minor degree**. Most departments offer all these types of programs.

To be granted a degree, a student must satisfy certain requirements which ensure a depth of study and a coherent combination of courses. These requirements, called a **degree program**, are expressed in terms of the number of units in lower and upper division courses to be completed in and outside the subject(s) of concentration. Depending on the extent of concentration in a subject area, a degree program may offer an honors program, a major program, a minor program, or certain combinations.

Students are encouraged to sample a wide range of courses before focusing on a particular area of concentration, but normally must commit themselves to their area(s) before entering the second half of the degree program. Students should be aware of any prerequisite courses for their programs that they may need to undertake in the first four levels. (See the *Definitions* section following.)

### Degree Requirements

All students admitted to the University as of fall 2006 must meet writing, quantitative, and breadth requirements in completing their undergraduate degree. See "Writing, Quantitative, and Breadth Requirements" on page 7.

Students should refer carefully to overall requirements of the faculties for degree requirements, as the requirements for a specific degree must be fulfilled. Some departments require specific prerequisite courses for entry to some upper division courses, and some faculties require completion of a minimum number of upper division courses to fulfil degree conditions. Some faculties require completion of a minimum number of units within the faculty to qualify for a degree. If in doubt, seek advice from Academic Advising and Success.

### Honors Program

An honors degree is comprised of 132 units in a specified honors program including approximately 48-50 units in specified upper division courses in the honors subject or field. Different honors programs have varying unit requirements in the lower division courses. (See faculty and departmental requirements.)

### Joint Honors Program

A joint honors degree requires completion of at least 132 units including the completion of a specific joint honors program, which would normally consist of a total of at least 50 units in upper division courses completed in two or more disciplines, as specified. Different joint honors programs have varying unit requirements in the lower division courses. (See faculty and departmental requirements.)

### Major Program

A general degree requires at least 120 units and, normally, completion of a major program. A major program consists of approximately 28 to 30 units in upper division courses as specified in the major subject or field. Varying unit requirements are needed

in the lower division courses for different major programs. (See faculty and departmental requirements. With special approval, two minors may be substituted for a major in the bachelor of education degree. The bachelor of general studies degree has broad requirements.)

### Joint Major Program

A general degree may be obtained by completion of 120 units including the completion of a joint major program. The specific joint major requires at least 30 units in upper division courses completed in two or more disciplines, as specified. Unit requirements in the lower division courses vary for different joint major programs. (See faculty and departmental requirements.)

### Double Major Program

A general degree may include completion of two major programs. The student must complete the following.

- the lower division requirements for each of the major subjects selected
- at least 28 units of upper division courses as specified in each of the two subjects in which the majors are to be claimed
- any other requirements of the particular departments concerned
- the requirements of the faculty in which the student will receive the degree

This permits study of two majors within a single faculty or across faculties. The bachelor's degree awarded will be determined according to the faculty in which all requirements have been met or, if the requirements of more than one faculty have been met, then from the faculty that the student selects. (See *Major-Minor Program* following.)

### Minor Program

A minor requires completion of at least 14 to 18 upper division units as specified in the subject. To qualify for a specific minor, at least seven units of upper division credit used toward the minor must have been completed in Simon Fraser University courses. A minor program also requires meeting any stipulated lower division requirements and may be used toward the requirements of a degree program.

### Extended Minor Program

This program consists of the lower division requirements for a major, and the upper division

requirements for a minor. A student must have their program approved by the extended minor program advisor.

### Major – Minor Program

A general degree may include the completion of a major program and a minor program. The student must complete at least 28 units of upper division courses as specified in the major subject, and at least 14 to 18 units of upper division courses as specified in the minor subject. The same upper division course may not be used for formal credit in both the major and the minor. The student must complete the lower division requirements for the major subject selected, all other requirements of the major department, the lower and upper division requirements for the minor selected, and the requirements of the faculty in which the student will receive the degree. This permits the undertaking of a major and a minor within a single faculty or across faculties.

### Double Major and Major – Minor Programs

#### Credit Value of Courses

In order to give sufficient weight to both majors in a double major program, the student may not apply the same upper division course for formal credit in both majors. Similarly, a student in a major-minor program may not use the same upper division course for formal credit in both the major and the minor. Also, a student undertaking a program consisting of more than one minor may not use the same upper division courses for credit toward more than one minor.

Where one course fulfils the content requirements of two related areas, additional replacement units in upper division work satisfactory to one of the departments or program committees must be completed to fulfil the overall credit requirements for the double major or major-minor program.

For lower division requirements, one course could fulfil both content and credit requirements as a prerequisite, but no course can carry double credit toward the degree total. In a number of possible combinations in the bachelor of arts or bachelor of general studies degree, certain constraints exist on the use of both lower and upper division courses.

In some instances, therefore, a student seeking a double major or a major-minor involving subjects in more than one faculty may need more than 120 units to fulfil the requirements of the general degree.

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### Changing Programs

A student who elects to complete a double major or a major-minor program may change his/her decision and graduate with a major only, provided that the requirements for the major and requirements of the faculty concerned have been fulfilled. Notification of such changes must be filed with the departments concerned and Student Services.

### Second Bachelor's Degrees

A student who already holds a bachelor's degree(s) from an approved institution may complete a second or subsequent bachelor's degree at the University, subject to the following conditions and regulations.

The basic requirement for a further bachelor's degree is the completion of the upper division requirements associated with a first bachelor's degree (except for the BEd degree – see "Bachelor of Education as a Second Degree" on page 200). Prior completion of lower division prerequisites may also be required or may be waived at the discretion of the department or program in which the further degree is being sought.

A student may not enrol in a further bachelor's degree program in a subject in which she/he already holds a degree. A student who has a minor (or equivalent) in a particular subject may enrol in a further degree with a major or honors program in that subject.

Credit earned towards a previous degree or diploma may not be used toward a further bachelor's degree. Transfer credit may be given for additional courses completed beyond the previous credential but prior to Simon Fraser University admission. However, the normal upper division residency requirement applies: at least two thirds of the upper division course work for the degree must be completed at Simon Fraser University. Some faculties may have additional residency requirements.

Faculties may limit inter-faculty transfer for second degree students.

Students admitted to second degrees are deemed to have met all of the breadth requirements (designated and undesignated), three units of the Q requirements and the lower division W requirement. (The remaining W and Q courses must be three units each. The W course must be upper division.)

For more information, see "Writing, Quantitative, and Breadth Requirements" on page 7.

### Post Baccalaureate Diploma Program

A diploma program should, in general, consist of regular upper division university courses; graduate courses may be included. The study program should be the equivalent of one full year or more of university study (30 or more units). A first university degree or the equivalent is normally a prerequisite, but, if

stipulated, mature applicants whose experience makes them particularly suited to a program may also be admitted.

#### Program Admission Requirements

- Completion of a recognized bachelor's degree (in any field of study) with a minimum graduation grade point average of 2.0 from a university in British Columbia or with a minimum graduation grade point average of 2.4 from a university outside of British Columbia, or equivalent.
- Students applying to the University for admission are required to meet undergraduate admission deadlines. Application forms should be accompanied by official documents and a statement of objectives in undertaking a diploma program.

#### Program Requirements

- Successful completion of an approved program comprised of 30 units of third and fourth year courses, and some graduate courses if appropriate.
- At least 15 units must be in a discipline or subject area which most closely fits the learning goals of the student.
- Minimum grade point average of 2.5 on courses applied toward the diploma.
- Completion of lower division prerequisites, if required.
- Completion of the diploma within five years of admission to the program.

#### Notes

- Students may complete more than one post baccalaureate diploma program.
- Students should consult with the diploma program advisor regarding availability of courses.
- Some of the program courses have prerequisites not included in the diploma requirements. Students are responsible for satisfying the prerequisites of all courses in their programs.
- Program applicants will need to refer to the current university calendar for detailed information concerning application and enrolment procedures, fees, program requirements, and course descriptions.
- There are program advisors in each department for that department's diploma programs.

#### Transfer Credit

- Transfer credit for work done at other institutions, before or after admission to the program, may be approved toward fulfilment of the program provided that at least 18 of the 30 required upper division units, including at least nine units in the student's area of concentration, be completed at Simon Fraser University.
- Transfer credit is normally only valid for approved courses completed within ten years of the diploma student's completion term.
- Transfer credit for use toward the diploma is granted only on approval of the registrar, the appropriate faculty post baccalaureate diploma committee, and the dean of the appropriate faculty.

- Credit for work done at Simon Fraser University or transfer credit for work done elsewhere prior to admission to the program may be approved provided that at least 15 of the 30 required upper division units, including at least eight units in the student's area of concentration, normally be completed after admission to the program.
- Units applied to one diploma may not be applied to another Simon Fraser University certificate or diploma or degree, and vice versa.

### Certificate Program

A certificate program consists mainly of regular lower division courses; upper division courses may be included. The program should be the equivalent of between one half and one full year of university study (18-30 units).

#### Program Admission Requirements

- Prospective students must apply to Simon Fraser University for admission and meet the normal admission requirements prior to undertaking a certificate program.

#### Program Requirements

- Students must maintain a minimum grade point average of 2.0 calculated on all courses applied to the certificate that are completed at Simon Fraser University. Duplicate courses are counted only once.

#### Note

- Units applied to one certificate may be applied also to major or minor programs of a bachelor's degree under the normal regulations governing those programs but may not be applied to another Simon Fraser University certificate or diploma.
- Some of the courses have prerequisites not included in the certificate requirements. Students are responsible for satisfying the prerequisites of all courses in their programs. Prerequisite information can be found in the University calendar in the course descriptions section.
- There are program advisors in each department or faculty for the certificate programs. Students intending to pursue a certificate should consult with the program advisor.
- Any student admitted to a certificate program who subsequently transfers to a degree program will need to complete the WQB degree requirements. See "Writing, Quantitative, and Breadth Requirements" on page 7.

### Co-operative Education

A co-operative education program consists of four or five work terms to be completed while doing regular academic terms. Co-op courses are granted additive credit. See "Additive Credits" on page 212 and "Additive Credit" on page 27.

## Undergraduate Degree Requirements

Students admitted to the University beginning in the fall 2006 term must meet writing, quantitative, and breadth requirements as part of any degree program they may undertake.

### Writing, Quantitative, and Breadth Requirements

All students completing an undergraduate degree program must complete a total of 36 units of courses designated as meeting writing, quantitative, or breadth requirements with a grade of C- or better.

#### Writing Requirements

Courses with a "W" designation are writing intensive, and will assist students to learn the course content through the process of writing assignments. These courses will help students to improve their writing abilities and overall communication skills.

Writing-designated courses have the letter "W" in their title, and are also identified at the end of the course description, just after the prerequisite information. For example (italics added):

- CRIM 300W-3 Current Theories... Criminology  
A detailed examination of current theories...  
Prerequisite: CRIM 101. *Writing.*

Students must achieve a grade of C- or better in a W course to obtain the W credit.

#### Lower Division W Requirement

- one lower division W course (3 units or more)

Students are advised to complete their first W course within their first 60 units of a degree program.

Students transferring from a BC college with 60 units should complete a transferable W course prior to admission to Simon Fraser University; alternatively they may enrol in an upper division W course at the University as soon as possible after admission.

**Upper Division W Requirements**

- one upper division W course, normally in the major subject (3 units or more)

The upper division W course must be completed at Simon Fraser University.

For a list of W courses, see [www.sfu.ca/ugcr](http://www.sfu.ca/ugcr).

**Quantitative Requirements**

Quantitative-designated courses, also known as “Q” courses, will assist students to develop quantitative (numerical, geometric) or formal (deductive, probabilistic) reasoning, and to develop skills in practical problem solving, critical evaluation, or analysis.

Q courses are identified by the word “Quantitative” at the end of the course description, just after the prerequisite information. For example (*italics added*):

- BUS 251-3 Financial Accounting I  
An introduction to financial accounting...  
Prerequisite: 12 units. *Quantitative*.

Students must achieve a grade of C- or better in Q courses to obtain the Q credit.

**Lower/Upper Division Q Requirements**

- two Q courses, lower or upper division (total 6 units or more)

Students are advised to complete their first Q course within their first 60 units of a degree program.

Students transferring to Simon Fraser University from a BC college with 60 units are recommended to complete a transferable Q course prior to admission to Simon Fraser University, or to enrol in a Q course at Simon Fraser University as soon as possible after admission.

For a list of Q courses, see [www.sfu.ca/ugcr](http://www.sfu.ca/ugcr).

**Breadth Requirements**

Breadth courses, also known as “B” courses, will expose students to concepts and ideas from a range of disciplines and perspectives, and will offer students an opportunity to examine and assess their values, beliefs and commitments.

B-designated courses are identified at the end of the course description by the words *Breadth-humanities (B-Hum)*, *Breadth-Social sciences (B-Soc)*, or *Breadth-science (B-Sci)* just after the prerequisite information. For example (*italics added*):

- CMNS 110-3 Introduction to Communication...  
An introduction to selected theories about human... communication. *Breadth-Social sciences*

Students complete a total of 24 units of breadth courses, and must achieve a grade of C- or better in B courses to obtain the B credit.

**Six Designated Breadth Courses**

Students may complete designated breadth courses outside their major throughout their degree programs, but are advised to complete them as early as possible in their program.

***Breadth-humanities***

- two courses labelled as Breadth-humanities (B-Hum, 6 units)

***Breadth-science***

- two courses labelled as Breadth-science (B-Sci, 6 units)

***Breadth-Social science***

- two courses labelled as Breadth-Social sciences (B-Soc, 6 units)

**Two Additional Breadth Courses**

- two courses outside the student's major program (undesigned, 6 units)

These additional courses may or may not be designated as breadth, and in most cases will fulfil the particular faculty or program breadth requirements.

The Faculty of Arts and Social Sciences requires two further breadth courses (see “Writing, Quantitative, and Breadth Requirements” on page 90).

Only courses outside of the student's major may count as breadth. For example, a student majoring in engineering science will not be able to count ENSC 100 as one of their B-Sci requirements. Similarly, students majoring in English will not be able to count ENGL 101 as one of their B-Hum requirements.

For a list of B courses, see [www.sfu.ca/ugcr](http://www.sfu.ca/ugcr).

**Multiple W, Q, and B Designations**

Some courses may fulfil more than one requirement. For instance, a course may count as both Q and B, or W and B, or W and Q, or W, Q and B, and students will receive all designation credit. No course, however, may fulfil two B requirements. Some courses may have multiple B designations (such as B-Soc and B-Hum), but students must decide which designation of a course to use in order to fulfil their requirements. For example, when completing Archaeology 232, a student must decide if they are completing this course to fulfil B-Hum or B-Soc, even though the course will appear on the transcript with both labels.

Students who change degree programs may need to re-visit any breadth designations they have previously chosen in light of their new program requirements.

**Foundations Courses**

The content of W and Q courses presumes that students have met a basic competency standard. Two Foundations courses are available to students who are not ready for W and/or Q courses:

- Foundations of Academic Literacy (FAL), and
- Foundations of Analytical and Quantitative Reasoning (FAN)

Students will be advised at admission if they are required to enrol in one of both of these courses.

Students required to enrol in one or both of these courses must complete the course(s) within their first three terms at Simon Fraser University (normally 45 units). A grade of C or better is required to progress from FAL into W courses or FAN into Q courses. Students may attempt these courses no more than twice. If the required grade of C is not achieved in two attempts or within three enrolled terms at the University, students will be blocked from enrolling in further course work at Simon Fraser University until competency in English and Math are demonstrated.

This competency can be demonstrated by:

- retaking English 12 or high school Math, or
- achieving a score of 4 on the essay section of the LPI (with a minimum of 50% on each of the subsections for English competency), or
- achieving a score of 20 out of 30 on the Simon Fraser University Q placement test (if the student

has not completed this test earlier) for mathematics competency, or

- by enrolling in transferable college courses (see “Admission from British Columbia and Yukon Secondary Schools” on page 20).

Students transferring to Simon Fraser University with 60 units are recommended to enrol as soon as possible in FAL or FAN if they are required to complete one or both of these courses.

**Foundations of Academic Literacy (FAL X99)**

This course introduces students to the kinds of reading and writing they will encounter in lower-division courses across university disciplines. (See “Foundations of Academic Literacy FAL” on page 382 within the *Course Catalogue* section of this Calendar.)

Units earned in FAL X99 are additive, and do not count towards the total units required for a degree. The grade received in FAL X99 is included in calculation of the cumulative grade point average. Students must receive a C or better in this course to proceed to a W course. Students may attempt this course twice.

**Foundations of Analytical and Quantitative Reasoning (FAN X99)**

This course is for students who need to upgrade their quantitative background in preparation for Q courses, or for those who wish to refresh their skills after several years away from mathematics. (See “Foundations of Analytical and Quantitative Reasoning FAN” on page 382 within the *Course Catalogue* section of this Calendar.)

Units earned in FAN X99 are additive, and do not count towards the total units required for a degree. The grade received in FAN X99 is included in calculation of the cumulative grade point average. Students must receive a C or better in this course to proceed to a Q course. Students may attempt this course twice.

Free Q placement testing is also available. For information on the Quantitative Placement Test, visit [www.math.sfu.ca](http://www.math.sfu.ca) and look for the Q Test link. Students who receive a pass on this test may bypass FAN X99 and may enrol directly in a Q course.

**Special WQB Requirements****Joint or Double Majors, Honors and Extended Minors**

Students completing joint or double majors and honors, or two extended minors, will not be required to complete double W, Q, and B requirements. W, Q, and B designated courses in either one or both disciplines of the major, honors or minor programs may be used to satisfy the writing, quantitative and breadth requirements. Undesignated breadth requirements can also be met within the two disciplines. For example, a student completing a double major in English and Physics may count

WQB Graduation Requirements		
A grade of C- or better is required to earn W, Q or B credit.		
Requirement	Units	Notes
<b>W</b> - Writing	6	Must include at least one upper division course, normally within the student's discipline
<b>Q</b> - Quantitative	6	Q courses may be lower or upper division
<b>B</b> - Breadth	18	Must be outside the student's major, and may be lower or upper division 6 units Social sciences: B-Soc 6 units humanities: B-Hum 6 units sciences: B-Sci
	6	6 units outside the student's major program (may or may not be B-designated courses, and will likely help fulfil individual degree program requirements)



B-science designated Physics courses as B-science, and B-humanities designated English courses as B-humanities, W designated English for the lower and upper division W requirement, and Q designated Physics courses toward the Q requirement.

### Second Degrees

Students admitted to a second degree program are deemed to have met all of the breadth requirements (designated and undesignated), three units of the Q requirements, and the lower division W requirement. (The remaining W and Q courses must be three units

each. The W course must be upper division.) See "Second Bachelor's Degrees" on page 7.

### WQB Transfer Credit from College

BC college courses that transfer to Simon Fraser University courses for credit and are certified as W, Q and B will be labelled as W, Q and B on the student's Simon Fraser University record. Please review the BC Transfer Guide ([www.bctransferguide.ca](http://www.bctransferguide.ca)) to determine if transferable courses receive designations.

Students transferring to Simon Fraser University from BC colleges are recommended to complete some Q and B courses at the college level, and a lower division W course if available.

Students transferring to Simon Fraser University from all other universities, or from colleges outside of BC, may have their transfer credit reviewed for WQB designations. Transfer courses must have been completed from September 2004 onward. Courses completed prior to September 2004 will not be reviewed for WQB designation.

## Graduate Programs

Programs of advanced learning and research leading to master's and doctoral degrees are offered.

Doctoral programs engage students in research, either independently or in collaboration with larger research groups. Master's programs introduce

students to the research process or prepare them with critical and analytical skills for the professions. Graduate diploma programs provide specialized combinations of courses for students who wish to upgrade their knowledge and skills at an advanced

level. For a complete list of all graduate and undergraduate degrees offered by the University, See "University Degrees" on page 9.

## University Degrees

### Honorary Degrees

doctor of fine arts *honoris causa* DFA  
doctor of laws *honoris causa* LLD  
doctor of letters *honoris causa* DLitt  
doctor of science *honoris causa* DSc

### Degrees

#### Faculty of Applied Sciences

bachelor of applied science (honors)  
bachelor of applied science  
bachelor of arts (honors)  
bachelor of arts  
bachelor of general studies (applied sciences)  
bachelor of science (honors)  
bachelor of science  
master of applied science  
master of arts  
master of engineering  
master of science  
doctor of philosophy  
doctor of philosophy under special arrangements

#### Faculty of Arts and Social Sciences

bachelor of arts (honors)  
bachelor of arts (joint honors)  
bachelor of arts  
bachelor of general studies  
master of arts  
master of arts in liberal studies  
master of public policy  
master of urban studies  
doctor of philosophy  
doctor of philosophy under special arrangements

#### Faculty of Business Administration

bachelor of business administration (honors)  
bachelor of business administration  
master of business administration  
master of financial risk management  
doctor of philosophy  
doctor of philosophy under special arrangements

#### Faculty of Communication, Art and Technology

bachelor of arts (honors)  
bachelor of arts  
bachelor of fine arts  
bachelor of science (honors)

bachelor of science  
bachelor of science (information technology, Tech BC)  
bachelor of science (interactive arts, Tech BC)  
master of arts  
master of fine arts  
master of publishing  
master of science  
doctor of philosophy  
doctor of philosophy under special arrangements

#### Faculty of Education

bachelor of education (honors)  
bachelor of education  
bachelor of general studies (education)  
master of arts  
master of education  
master of science  
doctor of education  
doctor of philosophy  
doctor of philosophy under special arrangements

#### Faculty of Environment

bachelor of arts (honors)  
bachelor of arts  
bachelor of science (honors)  
bachelor of science  
master of arts  
master of resource management  
master of resource management (planning)  
doctor of philosophy  
doctor of philosophy under special arrangements

#### Faculty of Health Sciences

bachelor of arts  
bachelor of arts (honors)  
bachelor of science  
bachelor of science (honors)  
master of public health  
master of science

#### Faculty of Science

bachelor of science (honors)  
bachelor of science  
master of environmental toxicology  
master of pest management  
master of science  
doctor of philosophy  
doctor of philosophy under special arrangements

### Certificates and Diplomas

#### All Faculties

post baccalaureate diploma

#### Faculty of Applied Sciences

certificate in computing studies  
post baccalaureate diploma in computing science

#### Faculty of Arts and Social Sciences

certificate in African studies  
certificate in Chinese studies  
certificate in criminology (general)  
certificate in criminology (advanced)  
certificate in ethnic and intercultural relations  
certificate in explorations in the arts and social sciences  
certificate in family studies  
certificate in First Nations studies research  
certificate in First Nations language proficiency  
certificate in French Canadian studies  
certificate in French language proficiency  
certificate in German studies  
certificate in Hellenic studies  
certificate in Italian studies  
certificate in labor studies  
certificate in liberal arts  
certificate in religious studies  
certificate for senior citizens  
certificate in Spanish language  
certificate in teaching ESL linguistics  
certificate in urban studies  
post baccalaureate diploma  
post baccalaureate diploma in criminology  
post baccalaureate diploma in First Nations studies  
post baccalaureate diploma in French and education  
post baccalaureate diploma in gerontology  
post baccalaureate diploma in humanities  
post baccalaureate diploma in legal studies  
post baccalaureate diploma in social policy issues  
post baccalaureate diploma in sustainable community development  
post baccalaureate diploma in teaching English as a second language  
graduate certificate in Latin American studies  
graduate diploma in urban studies

#### Faculty of Business Administration

certificate in international experiential learning  
graduate diploma in business administration

## Faculty of Communication, Art and Technology

post baccalaureate diploma in communication

## Faculty of Education

certificate in literacy instruction  
certificate in professional practices  
post baccalaureate diploma (general)  
post baccalaureate diploma in counselling and human development  
post baccalaureate diploma in early childhood education  
post baccalaureate diploma in special education

post baccalaureate diploma in environmental education  
graduate diploma in advanced professional studies in education

## Faculty of Environment

certificate in spatial information systems  
certificate in sustainable community development  
certificate in urban studies  
post baccalaureate diploma in sustainable community development  
graduate certificate in development studies  
graduate diploma in quantitative methods in fisheries management

## Faculty of Health Sciences

graduate diploma in global health

## Faculty of Science

certificate in actuarial mathematics  
certificate in earth sciences  
certificate in forestry geoscience  
certificate in health and fitness studies  
certificate in applied human nutrition  
post baccalaureate diploma in biological sciences  
post baccalaureate diploma in kinesiology  
graduate diploma in bioinformatics  
graduate diploma in quantitative methods in fisheries management

# Credentials by Program

Key to abbreviations used below	
BA	bachelor of arts
BA honors	bachelor of arts (honors)
BASc	bachelor of applied science
BBA	bachelor of business administration
BBA honors	bachelor of business administration (honors)
BEEd	bachelor of education
BEEd honors	bachelor of education (honors)
BFA	bachelor of fine arts
BGS	bachelor of general studies
BGS (Education)	bachelor of general studies (education)
BSc	bachelor of science
BSc honors	bachelor of science (honors)
certificate	certificate
co-op	co-operative education program
diploma	post baccalaureate diploma
EdD	doctor of education
extended minor	extended minor
graduate certificate	graduate certificate
graduate diploma	graduate diploma
joint major, joint honors, joint MA	joint programs
MA	master of arts
MALS	master of arts liberal studies
MASc	master of applied science
MBA	master of business administration
MDM	master of digital media
MEd	master of education
MEng	master of engineering
MET	master of environmental toxicology
MFA	master of fine arts
MFRM	master of financial risk management
minor	program requiring completion of specified minimum upper division courses
MPM	master of pest management
MPP	master of public policy
MPub	master of publishing
MRM	master of resource management
MSc	master of science
MURb	master of urban studies
PhD	doctor of philosophy
PhD	doctor of philosophy under special arrangements

actuarial mathematics – certificate  
actuarial science – BSc, honors, certificate, MSc  
advanced professional studies in education – graduate diploma  
African studies – certificate  
anthropology – BA, minor, extended minor, honors, co-op  
anthropology or sociology, and art and culture studies – joint major  
applied human nutrition – certificate

applied mathematics – BSc, honors  
applied and computational mathematics – MSc, PhD  
applied legal studies (Notaries Public) – MA  
applied physics – BSc, honors  
archaeology – BA, minor, extended minor, honors, MA, PhD, co-op  
archaeology and anthropology – BA joint major  
archaeology and First Nations studies – BA joint major  
art and culture studies – BA, minor  
art and culture studies and sociology and/or anthropology – BA joint major  
arts, general – BA, extended minor  
arts education – MA, MEd, PhD  
Asia-Canada – extended minor  
behavioural neuroscience – BSc, honors  
bioinformatics – graduate diploma  
biological physics – BSc, honors  
biological sciences – BSc, minor, honors, MSc, PhD, diploma, co-op  
biomedical physiology – BSc, minor, honors  
business administration – BBA, minor, honors, MBA, PhD, graduate diploma, co-op  
business administration and communication – BBA joint major  
business administration and computing science – BBA joint major, BSc joint major  
business administration and economics – BBA joint major, joint honors, BA joint major, joint honors  
business administration and geography – BBA joint major, BA joint major  
business administration and Latin American studies – BBA, joint major, BA joint major  
business administration and psychology – BBA joint major, BA joint major  
Canadian studies – BA, minor, extended minor, honors  
Canadian studies and anthropology – BA joint major, honors  
Canadian studies and archaeology – BA joint major, honors  
Canadian studies and business administration – BA joint major, honors, BBA joint major, honors  
Canadian studies and communication – BA joint major, honors  
Canadian studies and criminology – BA joint major, honors  
Canadian studies and economics – BA joint major, honors  
Canadian studies, economics and/or business administration – BBA joint major, honors, BA joint major, honors  
Canadian studies and English – BA joint major, honors  
Canadian studies and geography – BA joint major, honors  
Canadian studies and history – BA joint major, honors  
Canadian studies and political science – BA joint major, honors

Canadian studies and sociology – BA joint major, honors  
Canadian studies and sociology and/or anthropology – BA joint major, honors  
chemical physics – BSc, honors, co-op  
chemistry – BSc, minor, honors, MSc, PhD, co-op  
Chinese studies – certificate  
cognitive science – BA, minor, honors  
communication – BA, minor, extended minor, honors, MA, PhD, diploma, co-op  
communication and interactive arts and technology – BA joint major, BSc joint major  
computer and electronics design – minor  
computing science – BSc, minor, honors, BA, honors, BSc dual degree, MSc, PhD, diploma, co-op  
computing science and linguistics – BA joint major, BSc joint major  
computing science and molecular biology and biochemistry – BSc joint major, BSc joint honors  
computing science and philosophy – BA joint major, BA joint honors, BSc joint major, BSc joint honors  
computing studies – certificate  
contemporary arts – BA, BFA, minor, extended minor, joint major, MFA  
counselling and human development – minor, diploma  
counselling psychology – MA, MEd  
criminology – BA, minor, extended minor, honors, MA, PhD, general and advanced certificate, diploma, co-op  
criminology and women's studies – BA joint major  
curriculum and instruction – minor, MA  
curriculum theory and implementation – PhD  
dance – BFA, extended minor  
development studies – graduate certificate  
digital media – MDM  
early childhood education – minor, diploma  
earth sciences – BSc, minor, honors, MSc, PhD, certificates, co-op  
economics – BA, minor, extended minor, honors, MA, PhD, diploma, co-op  
education – BEEd, honors, MEd, MA, MSc, PhD, EdD, diploma, certificate, graduate diploma  
education counselling and human development – minor  
educational leadership – MA, MEd, EdD  
educational practice – MEd  
educational psychology – minor, MA, MEd, PhD  
educational technology and learning design – MA, MEd, PhD  
elementary school physical education – minor  
engineering science – BASc, MASc, MEng, PhD, co-op  
English – BA, minor, extended minor, honors, MA, PhD, co-op  
English and French literatures – BA joint major, joint MA  
English and humanities – BA joint major  
English and women's studies – BA joint major  
Environmental chemistry – minor

Environmental education – minor, diploma	international experiential learning – certificate	political science – BA, minor, extended minor, honors, MA, PhD, co-op
Environmental science – BSc, honors, co-op	international studies – BA, minor, honors, MA	political science and economics – BA joint major
Environmental toxicology – minor, MET	international and global education – minor	political science and women's studies – BA joint major
Ethnic and intercultural relations – certificate	Italian studies – certificate	professional practices – certificate
executive MBA – MBA	kinesiology – BSc, minor, honors, MSc, PhD, diploma, co-op	psychology – BA, minor, extended minor, honors, MA, PhD, co-op
explorations in the arts and social sciences – certificate	labor studies – minor, certificate	psychology and criminology – BA joint major
family studies – certificate	Latin American studies – minor, extended minor, MA, graduate certificate, co-op	psychology and women's studies – BA joint major
film – BFA, extended minor	Latin American studies and archaeology – BA joint major	public health – MPH
film and video studies – minor	Latin American studies and business administration – BA joint major, BBA joint major	public policy – MPP
financial risk management – MFRM	Latin American studies and communication – BA joint major	publishing – minor, MPub
fine and performing arts – minor	Latin American studies and economics – BA joint major	quantitative methods in fisheries management – graduate diploma
fine Arts in interdisciplinary studies – MFA	Latin American studies and geography – BA joint major	religious studies – certificate
First Nations language proficiency – certificate	Latin American studies and history – BA joint major	resource and environmental management – MRM, MRM (Planning), PhD, co-op
First Nations studies – major, minor, diploma	Latin American studies and political science – BA joint major	resource management and business administration – MRM, MBA joint
First Nations studies and archaeology – BA joint major	Latin American studies and sociology and/or anthropology – BA joint major	science, general – BSc
First Nations studies and linguistics – BA joint major	learning disabilities – minor	Science Year One Program – 100 division BISC, CHEM, CMPT, ECON, MACM, MATH, PHYS, STAT courses
forestry geoscience – certificate	legal studies – minor, diploma	secondary mathematics education – minor, MSc, MEd
French – BA, extended minor, honors, MA, co-op	liberal arts – certificate, co-op	senior citizens, certificate for – certificate
French Canadian studies – certificate	liberal studies – MALS	social policy issues – diploma
French and education – diploma	life sciences year two program – 200 division BISC, CHEM, MBB courses	sociology – BA, minor, extended minor, honors, co-op
French education – minor	linguistics – BA, minor, extended minor, honors, MA, PhD	sociology and anthropology – BA joint major, joint honors, MA, PhD, co-op
French, history, politics – BA joint major	linguistics and anthropology – BA joint major	sociology or anthropology and art and culture Studies – BA joint major
French language cohort in public administration and community services – extended minor	literacy instruction – certificate	sociology or anthropology and communication – BA joint major
French language proficiency – certificate	management and systems science – BSc, honors, co-op	sociology and/or anthropology and criminology – BA joint major
gender studies – minor	management of technology MBA – MBA	sociology and/or anthropology and linguistics – BA joint major
general science – BSc	marine science	sociology and/or anthropology and women's studies – BA joint major
general studies – BGS	mathematical physics – BSc (honors only)	software systems – BSc
general studies (education) – BGS (Education)	mathematics – BA, minor, extended minor, honors, BSc, minor, honors, MSc, PhD, co-op	Spanish language proficiency – certificate
geographic information science – BSc, honors	mathematics and computing science – BSc joint major, joint honors	spatial Information systems – certificate
geography – BA, minor, extended minor, honors, MA, MSc, PhD, certificate, co-op	mathematics education – PhD	special education – diploma
geography – Environmental Specialty – BA, minor, honors	MBA program – MBA	statistics – BA, minor, extended minor, honors, BSc, minor, honors, MSc, PhD, co-op
geography and economics – environmental specialty – BA joint major	mechatronic systems engineering – BAsC major, honors	sustainable community development – certificate, diploma
German studies – certificate	molecular biology and biochemistry – BSc, minor, honors, MSc, PhD, co-op	teaching English as a second language – diploma
gerontology – minor, MA, PhD, diploma	molecular biology and biochemistry and business administration – BSc joint major, joint honors	teaching English as a second or foreign language – MEd
global asset and wealth management – MBA	music – BFA, extended minor	teaching ESL linguistics – certificate
global health – graduate diploma	master of arts – co-op	TechOne – lower division Simon Fraser University Surrey courses
health and fitness studies – certificate	Native studies research – certificate, co-op	theatre – BFA, extended minor
health sciences – BA, BSc, minor, honors, MSc, MPH	nuclear science – minor	undergraduate semester in dialogue
Hellenic studies – certificate	pest management – MPM	urban studies – MUrb, certificate, graduate diploma
history – BA, minor, extended minor, honors, MA, PhD, co-op	philosophy – BA, minor, extended minor, honors, MA, PhD, co-op	visual art – BFA, extended minor
history and humanities – BA joint major	philosophy and humanities – BA joint major	women's studies – BA, minor, extended minor, MA, PhD, co-op
history and women's studies – BA joint major	physical education – minor	world literature – BA, minor, honors
humanities – BA, minor, extended minor, diploma, co-op	physical geography – BSc, minor, honors, co-op	
humanities and French – BA joint major	physics – BSc, minor, honors, MSc, PhD, co-op	
humanities and women's studies – BA joint major		
individual program – MA, MEd		
industrial mathematics – BSc, honors, co-op		
information systems in business administration and computing science – BBA, BA, BSc joint major		
integrated studies – BGS		
interactive arts and technology – BA, BSc, minor, honors, MA, MSc, PhD, co-op		
interactive arts and technology and business administration – BA joint major, BSc joint major, BBA joint major		

# Academic Calendar of Events

## 2009 Fall Term

### September

- 7 Mon LABOR DAY. Offices closed.
- 8 Tues Classes commence.  
Last day for students completing degree requirements during summer to cancel application to graduate in October.
- 14 Mon Deadline for submission of undergraduate grade changes from 2009 summer term, summer session and intersession.  
Deadline for undergraduate applications for reactivation to the fall term.
- 21 Mon Last day for graduate students to enrol.  
Last day for graduate students to drop courses with no notation on transcript.
- 30 Tues Last day for receipt of grades deferred from previous term for graduate students.  
Deadline for application for undergraduate admission or readmission to the 2010 spring term.

### October

- 8 Thurs Fall convocation.
- 9 Fri Fall convocation.
- 12 Mon THANKSGIVING DAY. All classes cancelled. Offices closed.
- 13 Tues Last day for undergraduates to drop courses except under special procedures applicable in extenuating circumstances.
- 23 Fri Deadline for submission of undergraduate application for graduation without a late fee for students completing requirements by the end of the 2009 fall term.

### November

- 2 Mon Last day for graduate students to drop courses without academic penalty except under special procedures applicable in extenuating circumstances.
- 11 Wed REMEMBRANCE DAY. All classes cancelled. Offices closed.
- 23 Mon Last day for graduate students to drop courses under special procedures applicable in extenuating circumstances.

### December

- 2 Wed Last day for undergraduates to drop courses under special procedures applicable in extenuating circumstances.
- 7 Mon Classes end.
- 9 Wed Examination period for undergraduates begins.
- 11 Fri Final deadline for submission of undergraduate application for graduation (with a late fee) for students completing requirements by the end of the 2009 fall term.
- 16 Wed Grades available on the student information system, as they are received (approximately five working days after the final examination).
- 18 Fri Examination period for undergraduates ends.
- 23 Wed Deadline for submission of all graduate degree requirements.
- 25 Fri CHRISTMAS DAY. Offices closed.
- 26 Sat BOXING DAY. Offices closed.

## 2010 Spring Term

*Deadlines are affected by the February 15-26 Olympic Games break*

### January

- 1 Fri NEW YEAR'S DAY. Offices closed.
- 4 Mon Classes commence.  
Last day for undergraduate students completing degree requirements in fall to cancel application to graduate.
- 8 Fri Deadline for undergraduate applications for reactivation to the spring term.  
Deadline for submission of undergraduate grade changes from the 2008 fall term.
- 15 Fri Deadline for submission of application to the professional development program (PDP) for 2010 fall term.
- 18 Mon Deadline for submission of graduate student application to graduate for students completing requirements by the end of the 2009 fall term.  
Last day for graduate students to enrol.  
Last day for graduate students to drop courses with no notation on transcript.
- 29 Fri Last day for receipt of grades deferred from previous term for graduate students.

### February

- 1 Mon Deadline for application for undergraduate admission or readmission to the 2010 summer term, intersession and summer session.
- 5 Fri Last day for undergraduates to drop courses except under special procedures applicable in extenuating circumstances.  
Deadline for submission of undergraduate application for graduation without a late fee, for students completing requirements by the end of the 2010 spring term.
- 15-26 Olympic Games break. All classes cancelled. Offices open.

### March

- 1 Mon Deadline for application for BC, Canadian and US grade 12 Early Admission students to the 2010 fall term.
- 22 Mon Last day for graduate students to drop courses without academic penalty except under special procedures applicable in extenuating circumstances.

### April

- 2 Fri GOOD FRIDAY. All classes cancelled. Offices closed.
- 5 Mon EASTER MONDAY. All classes cancelled. Offices closed.
- 13 Tues Last day for undergraduates and graduates to drop courses under special procedures applicable in extenuating circumstances.
- 16 Fri Classes end.  
Deadline for submission of graduate student application to graduate for students completing requirements by the end of the 2010 spring term.  
Final deadline for submission of undergraduate application for graduation (with a late fee) for students completing requirements by the end of the 2010 spring term.

- 18 Sun Examination period for undergraduates begins.
- 23 Fri Grades available on the student information system as they are received (approximately five working days after the final examination).
- 28 Wed Examination period for undergraduates ends.  
Deadline for submission of all graduate degree requirements, including library submission.
- 30 Fri Deadline for application for undergraduate admission or readmission to the 2010 fall term.

## 2010 Summer Term

(including intersession, May-June and summer session, July-August)

### May

- 12 Wed Summer term and intersession classes commence.  
Last day for students completing degree requirements in 2010 spring term to cancel application to graduate.
- 14 Fri Deadline for submission of application to the professional development program (PDP) for 2011 spring term.
- 19 Wed Deadline for submission of undergraduate grade changes from the 2010 spring term.  
Deadline for undergraduate applications for reactivation to the summer term.  
Last day for undergraduates to drop intersession courses except under extenuating circumstances.
- 24 Mon VICTORIA DAY. All classes cancelled. Offices closed.
- 27 Tues Last day for graduate students to enrol.  
Last day for graduate students to drop courses with no notation on transcript.
- 31 Mon Last day for receipt of grades deferred from previous term for graduate students.

### June

- 15 Tues Spring convocation.
- 16 Wed Spring convocation.  
Last day for undergraduates to drop summer term courses except under special procedures applicable in extenuating circumstances.
- 17 Thurs Spring convocation.
- 18 Fri Spring convocation.  
Deadline for submission of undergraduate application for graduation without a late fee for students completing requirements by the end of the 2010 summer term.
- 22 Tues Intersession classes end.
- 23 Wed Last day for undergraduates to drop intersession courses under special procedures applicable in extenuating circumstances.
- 29 Tues Last day of Intersession.
- 30 Wed Summer session classes for undergraduates commence.

### July

- 1 Thurs CANADA DAY. All classes cancelled. Offices closed.

12 Mon	Last day for graduate students to drop courses without academic penalty except under special procedures applicable in extenuating circumstances.	6 Fri	Last day for undergraduates to drop summer session courses except under extenuating circumstances.		Final deadline for submission of undergraduate application for graduation (with a late fee) for students completing requirements by the end of the 2010 summer term.
<b>August</b>		11 Wed	Summer term classes end. Summer session classes for undergraduates end.	22 Sun	Summer term and summer session examination period for undergraduates ends.
2 Mon	BC DAY. All classes cancelled. Offices closed.	13 Fri	Summer term and summer session examination period for undergraduates begins. Deadline for submission of graduate student application to graduate for students completing requirements by the end of the 2010 summer term.	27 Fri	Deadline for submission of all graduate degree requirements. Grades available on the student information system, as they are received (approximately five working days after the final examination).
3 Tues	Last day for graduate students to drop summer term courses under special procedures applicable in extenuating circumstances.				

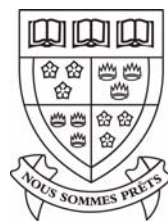
## Start of Each Class Week

Start of each class week		Start of each class week		Start of each class week	
<b>2009 Fall Term</b>		<b>2010 Spring Term</b>		<b>2010 Summer Term</b>	
week 1	Tuesday, September 8	week 1	Monday, January 4	week 1	Wednesday, May 12
week 2	Tuesday, September 15	week 2	Monday, January 11	week 2	Thursday, May 20
week 3	Tuesday, September 22	week 3	Monday, January 18	week 3	Thursday, May 27
week 4	Tuesday, September 29	week 4	Monday, January 25	week 4	Thursday, June 3
week 5	Tuesday, October 6	week 5	Monday, February 1	week 5	Thursday, June 10
week 6	Wednesday, October 14	week 6	Monday, February 8	week 6	Thursday, June 17
week 7	Wednesday, October 21	February 15-26	Olympic Games break; classes cancelled	week 7	Thursday, June 24
week 8	Wednesday, October 28	week 7	Monday, March 1	week 8	Friday, July 2
week 9	Wednesday, November 4	week 8	Monday, March 8	week 9	Friday, July 9
week 10	Thursday, November 12	week 9	Monday, March 15	week 10	Friday, July 16
week 11	Thursday, November 19	week 10	Monday, March 22	week 11	Friday, July 23
week 12	Thursday, November 26	week 11	Monday, March 29	week 12	Friday, July 30
week 13	Thursday, December 3	week 12	Wednesday, April 7	week 13	Monday, August 9
		week 13	Wednesday, April 14		

## Significant Future Dates

Visit [www.sfu.ca/senate/SenateComms/CC](http://www.sfu.ca/senate/SenateComms/CC) for a list of significant future dates.





# Undergraduate Studies

Registrar and Senior Director, Student Enrolment  
K. Ross BA (Alta), MA, (Royal Roads)  
778.782.4176 Tel  
778.782.5732 Fax





# Admission and Readmission

Simon Fraser University welcomes applications from Canadian and International students. All new students must apply for and be granted admission to the University. An admission offer is required before students may enrol in courses for academic credit.

Readmission information is given later in this section.

Direct all admission related enquiries to Admissions, Student Services, Simon Fraser University, 8888 University Drive, Burnaby, BC, V5A 1S6, 778.782.6930 Tel, 778.782.4969 Fax, <http://students.sfu.ca>

An advising service is available for potential applicants. Call 778.782.3397 for an appointment.

**When eligible applicants exceed the number that can be accommodated, the Simon Fraser**

**University reserves the right to select from among the qualified applicants.**

## Protection of Privacy

Simon Fraser University gathers and maintains information used for the purposes of admission, enrolment and other fundamental activities related to being a Simon Fraser University community member and to attending a public post-secondary institution in the Province of British Columbia.

In submitting an application for admission, all applicants are advised that the information they provide and any other information placed into the student record will be protected and used in compliance with British Columbia's Freedom of Information and Protection of Privacy Act (1992).

All British Columbian applicants will be asked to provide their BC personal education numbers (PEN) at the time of application. All others will be assigned a PEN by the British Columbia Ministry of Advanced Education, Training and Technology. Its uses are restricted to research and program evaluation. No identifiable personal information will be released.

## Retention of Documents

The documents which students supply to support admission applications will be retained for three terms following the term to which application is made. Then, application forms, transcripts and other materials related to applications will be destroyed. Irreplaceable documents will be returned to the applicant if requested at the time of application. All other documents become the property of the University.

## Introduction

This section contains five main areas.

- The **admission process** describes the 'how and when' of the various stages involved in applying to the University.

- **All applicants** details those admission requirements or policies applicable to any applicant.
- The next three sections — **British Columbia, Canada and international** — provide admission requirements for the respective areas. Within each

section, requirements are provided for *secondary school, college, and university* level applicants.

- Finally, **readmission** explains the requirements and processes to be followed by previously admitted students wishing to re-commence their studies.

## Admission Process

### How to Apply

To apply for admission, visit <http://students.sfu.ca>, which links to myBCcampus (the post-secondary application service of BC). There, you begin your application by entering basic academic and biographical data. From myBCcampus, the application continues to the Simon Fraser University part of the web application where applicants insert their intended program of studies. Applicants can pay all application fees by credit card. After the application is acknowledged, and if the applicant is a Canadian grade 12 student applying for the fall term, the applicant will be invited to report grades online.

Application fees may be sent at the time application is made or soon after. If payment is made later, quote the reference number given to the applicant when the submission is acknowledged by the University.

### Required Documents

The following supporting official documents must also be submitted from the issuing institution before any application will be considered.

- official copy of the appropriate school leaving certificate (e.g. Canadian Secondary School transcript of grades)
- official transcripts from all post-secondary institutions attended, whether completed or not
- official reports of any standard tests written.

All documents must be originals (photocopies not accepted). Replaceable documents submitted with applications become the University's property and are not returned. Irreplaceable documents are returned to the applicant if requested at the time of application.

Official translations, certified by an educational or embassy official, or made by a certified translator are required for records not in English or French. For applicants residing in BC, translations should be completed by the Society of Translators and

Interpreters of BC ([www.stibc.org](http://www.stibc.org)), or MOSAIC Translation Services at [www.mosaic-trans.com](http://www.mosaic-trans.com).

Submit applications and any available documents as early as possible but not more than 12 months before the first term. See below for deadlines for receipt of applications and in the *Academic Calendar of Events* (page 12). Applications received after the published deadline may be evaluated selectively at the discretion of the associate director, university admissions.

### English Language and Literacy Admission Requirement, and Quantitative and Analytical Skills Requirement

These requirements apply to applicants seeking entry to degree programs (see "English Language and Literacy Requirements" on page 18 and "Quantitative and Analytical Skills Requirements" on page 19).

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## Application Deadlines

Term	Application Deadline
spring 2010	October 1, 2009
summer 2010	February 2, 2010
fall 2010	April 30, 2010
spring 2011	September 30, 2010
summer 2011	February 1, 2011

## Application Fee

### Level 1

Each time an applicant applies for admission or readmission, a \$45 application fee is required. This fee, non-refundable and not applicable to tuition fees, must accompany the application for admission or be paid soon after making an application.

### Level 2

A \$100 application fee is required for all applicants whose academic records, in whole or in part, originate outside of British Columbia. (A level 1 fee is assessed if the documents originate from a Canadian high school, or if the applicant is participating in a recognized exchange program between Simon Fraser University and another institution.) This fee is non-refundable and not applicable to tuition fees.

## Offers of Admission

Admission offers are valid only for one term. Applicants who are admitted but do not enrol in classes, or who enrol but withdraw from classes before or during their first term, must apply again to attend a subsequent term. On an exception basis, an admission offer to a subsequent term may be requested by completing the online admission deferral form with supporting documentation.

## Transfer Credit

Transfer credit is granted on the basis of work at another recognized institution; transfer units reduce the total required units for a Simon Fraser University degree, diploma or certificate. Transfer credit should not be confused with advanced standing. Transfer credit is often given without any concomitant advanced standing; the reverse may also be true.

### Regulations

In most cases, total transfer and course challenge credit may not exceed 60 units, and may not include more than 15 as upper division work. Within these limits, units may be transferred for all courses passed, which are acceptable under the University's policies.

Transfer credit is not used to calculate the cumulative grade point average (CGPA). Transfer credit for ungraded passes (e.g. pass/fail) will be granted only if the course has been previously articulated for transfer

credit and if all students in the course are graded in a similar manner. Transfer credit is not granted for credit assessed by other institutions for knowledge acquired outside formal instruction, but course challenge credit may be obtained.

Students who are attending, or who have attended Simon Fraser University should note that in addition to these regulations

- work completed after initial enrolment must be passed with a grade of C (2.0 or 60%) or higher to receive transfer credit; and
- admitted students who wish to complete courses at another institution for transfer towards their Simon Fraser University program must obtain advance permission using the Letter of Permission form from Student Services or <http://students.sfu.ca/forms>.

See "Student Enrolment" on page 26 for information.

Students completing certificates or diplomas should note that each program has its own specific restrictions on transfer credit permitted. Consult the appropriate Calendar sections for these limitations.

Special transfer credit regulations apply to the bachelor of general studies, bachelor of education, bachelor of applied science in engineering science, honors degree programs and to students attending other universities on formal exchange programs. Refer to the "Faculty of Arts and Social Sciences" on page 88, "Transfer Credit" on page 199 for information regarding the Faculty of Education, and "Faculty of Applied Sciences" on page 76.

Courses transferred, together with those subsequently completed at the University, must meet the general and specific requirements of the faculty and department in which the student chooses a major or honors. Some awarded transfer credit may be designated 'general elective credit.' Individual faculties may restrict the general elective credit that may be counted toward a degree. The applicant should not assume that he/she will complete the degree with a number of units equal to the difference between total units required and transferred units. Although this calculation will usually be correct for a student who remains within a field of study, it will not necessarily be correct for one who changes fields.

Transfer credit is designated as type one, two, or three. Type one is **assigned** credit, used for a Simon Fraser University equivalent. Type two is **unassigned** credit in a subject area, used for courses without a Simon Fraser University equivalent, but which are acceptable to a department as fulfilling subject requirements for a general or honors degree in that department. For example, 'BISC 1XX 3' means that three units in biological sciences have been granted. Type three is **general elective credit**, used for courses which are judged to be transferable but do not fulfil specific faculty departmental requirements.

General elective credit is counted toward the total required for the degree. Individual faculties may restrict the amount of general elective credit that may be counted toward a degree in that faculty.

Departments may require students to repeat prerequisite courses for which they have received transfer for a D grade. The repeated courses show on the student's permanent record but double credit will not be granted.

## Advanced Standing

Advanced standing is placement to a certain level in a subject area granted on admission. The department concerned examines the applicant's previous work, or asks the applicant to complete a placement test, and then places the applicant at a certain level in the sequence of courses in the department.

## Program Approval

Newly admitted students who wish to complete either a certificate, post baccalaureate diploma or a further undergraduate degree must obtain program approval from their faculty or department prior to enrolling.

## Enrolment Limitations

Completion of minimum requirements does not guarantee admission to any course, program, department, school or faculty. When the number of qualified applicants exceeds the number that, in the opinion of the University, can be accommodated, the University reserves the right to select from among qualified applicants.

## Admission and Approval into an Academic Program

Students may apply for academic program admission in one of eight faculties: applied sciences; arts and social sciences; business administration; communication, art and technology; education; environment; health sciences; and science.

Applicants may indicate an alternate program if they are not selected to their first choice of program. Normally, this alternate program will be in a different faculty. For example, a first choice may be the BBA program in the Faculty of Business Administration. Due to insufficient space, this is not approved. The second choice is the BSc program in the Faculty of Science. If this is not approved either, the University might choose to offer the applicant admission to a program that he or she did not choose. In this example, the student is offered entry to the BA program in the Faculty of Arts and Social Sciences. The student may enrol in courses, and in a subsequent term, may seek entry to either the BBA or BSc, or may complete a BA in the Faculty of Arts and Social Sciences.

## All Applicants

These admission requirements are extracted from the more complete regulations approved by senate. Regulations interpretation rests with the senate committee on undergraduate studies. The University reserves the right to reject or accept any applicant.

All percentages are based on a pass mark of 50%. For schools and colleges operating on a pass mark other than 50%, the percentage required for admission is adjusted. Applicants for off-campus and distance education programs must follow the same application procedures and meet the same requirements as regular on-campus students. Specific details on these programs are available in brochures published each term (see *Continuing Studies*).

## English Language and Literacy Requirements

All applicants to Simon Fraser University must demonstrate competence and literacy in the English language both prior to admission and as part of their undergraduate degree program. There is a minimum threshold that is required to be considered for admission and a minimum threshold that is required to register in SFU Writing Intensive (W) courses.

## English Language and Literacy Admission Requirement

English is the language of instruction at Simon Fraser University. All applicants, regardless of country of

origin or citizenship status, will be required to demonstrate competence and literacy in the English language prior to admission. Competence is expected in all four of the following skills: listening, reading, speaking and writing.

Applicants to undergraduate programs must demonstrate English language competence and literacy in one of several ways as listed below.

- obtain a minimum grade of 60% in English 12 or English Literature 12 completed at a Canadian high school; or
- obtain a minimum grade of 60% in an equivalent to English 12 or English Literature 12 course completed at an eligible international secondary school that uses English as the language of

instruction but operates in a country where the primary language is not English; or

- obtain a minimum C- grade in an English (ENGL) course or in a certified W course for which Simon Fraser University would grant transfer credit. To receive transfer credit, the course must be completed at a post-secondary institution in which the language of instruction and examination is English; or
- obtain a satisfactory score on one of the following English Language Proficiency tests\* (IELTS is preferred):
  - International English Language Testing System (IELTS) with a minimum score of 6.5 on the Academic Modules; or
  - TOEFL iBT (Test of English as a Foreign Language internet based test) with an overall score of 88 or better with a minimum score of 20 in each of the four components (listening, speaking, writing, reading); or
  - TOEFL CBT (Test of English as a Foreign Language computer based test) with a minimum score of 230 including a minimum essay score of 4.5; or
  - TOEFL CBT with a minimum score of 250; or
  - successful completion of the Simon Fraser University English Bridge Program (please see English Bridge Program below)

\*applicants who have written the IELTS or the TOEFL but whose score does not meet the minimum acceptable score as listed above may be eligible for the English Bridge Program.

### Writing Intensive Course Degree Requirement

All students must successfully complete at least two Writing Intensive (W) courses to graduate with a bachelor's degree. To register directly in a W course, students must have achieved one of the following.

- a minimum grade of 75% in English 12 or English Literature 12 (or the equivalent); or
- a minimum grade of C- in a post-secondary English or certified W course for which Simon Fraser University grants transfer credit.

Applicants who present an English 12 or English Literature grade of 60%-74% and who do not have eligible post-secondary transfer credit as listed above; and students who present an IELTS score below 6.5; and students who only present a TOEFL score, must complete one of the following before they may register in a W course.

- the Language Proficiency Index (LPI) with a minimum score of four on the essay section and 50% on all other parts; or
- Foundations of Academic Literacy (FAL X99-4) with a minimum C grade. This course must be completed within the first three enrolled terms at Simon Fraser University (normally 45 units).

For more information, please refer to Simon Fraser University's writing requirements at [http://www.sfu.ca/ugcr/For\\_Students/](http://www.sfu.ca/ugcr/For_Students/)

### Quantitative and Analytical Skills Requirements

All applicants must demonstrate quantitative and analytical skills competence both prior to admission and as part of their undergraduate program. There is a minimum threshold that is required to be considered for admission, and there is a minimum threshold required to register in Quantitative (Q) courses.

#### Quantitative Admission Requirement

Applicants must demonstrate competence in quantitative and analytical skills in one of several ways as listed below.

- obtain a minimum grade of 60% or higher in Principles of Math 11, Principles of Math 12, or Applications of Math 12 (or their equivalents); or
- obtain a minimum grade of C- in a three-unit math course or certified Q course for which Simon Fraser University grants transfer credit.

### Quantitative and Analytical Course Degree Requirement

All students must successfully complete at least two Quantitative and Analytical (Q) courses to graduate with a bachelor's degree. To register in a Q course, students must have achieved one of the following.

- a minimum grade of 70% in Principles of Math 11, Principles of Math 12, or Applications of Math 12 (or their equivalents); or
- a minimum grade of C- in a post-secondary math or certified Q course for which Simon Fraser University would grant transfer credit.

Applicants who present a high school math grade of 60%-69% and who do not have eligible post-secondary transfer credit as listed above must complete one of the following before they may register in a Q course.

- the Quantitative placement test with a minimum grade of 20 out of 30. The test must be written within the first term at Simon Fraser University; or
- Foundations of Analytical and Quantitative Reasoning (FAN X99-4) with a minimum C grade. This course must be completed within the first three enrolled terms at the University (normally 45 units).

### English Bridge Program

This ten week intensive English program is offered by the Language Training Institute in the Faculty of Arts and Social Sciences, on the main Burnaby campus. Emphasizing the English language skills needed in the academic setting, the program is for students who are otherwise fully admissible but who do not completely meet the English language requirements.

Applicants who have satisfied the academic requirements for admission and who present the following test scores are eligible to participate in the English Bridge Program.

- IELTS (academic module) overall 5.5 with no individual score below 5; or
- TOEFL: 540; CBT: 207; iBT: 76

Applicants will receive conditional University admission. Upon successful completion of the English Bridge Program with an IELTS score of 6.0, students will be granted automatic admission to an undergraduate program the following term. For more information, contact SFU International at 778.782.7131 Tel; [ebp@sfu.ca](mailto:ebp@sfu.ca); [www.sfu.ca/ebp](http://www.sfu.ca/ebp)

### Diverse Qualifications Admission Policy

Each term, many more admission applications are received than can be accepted. Academic performance is the main criterion for admission and is used exclusively in 90% of cases. However, it is recognized that some candidates have other attributes and achievements that should be considered in determining admission. The University seeks to admit not only applicants who are academically very well qualified but also those who meet minimum admission standards and have

- demonstrated commitment and/or excellence in other endeavours; or
- succeeded in their studies in spite of difficult circumstances.

The University may select up to 10% of new students, taking into account these diverse qualifications. To be considered under this policy, complete a personal

information profile (see "Personal Information Profile" below) and submit it with one letter of reference.

Applicants admitted via Diverse Qualifications are offered admission to the Faculty of Arts and Social Sciences or SFU Surrey's TechOne Program.

This policy applies only to those who meet the minimum academic admission requirements, the English language and literacy requirements, and the analytical and quantitative skills requirement (see above) except where otherwise noted.

### Personal Information Profile

To complete the personal information profile, visit <http://students.sfu.ca/admission/requirements/provinces/dqform.html>. The profile must be submitted before the application deadline.

### Students with Disabilities

Academically qualified students who have a physical, mental health, sensory or specific learning disability are encouraged to attend Simon Fraser University. The University will ensure that applicants are not denied admission as a result of their disability and that, where appropriate, accommodation will be made with respect to admission criteria. Students seeking exemption from an admission requirement on the basis of a disability should contact the Admissions Office at 778.782.5513 between the hours of 10 am and 11 am, Monday to Friday, and additionally on Tuesday from 3 pm to 4 pm, Pacific time. For all other disability-related issues, contact the Centre for Students with Disabilities directly at 778.782.3112.

### Programs for Working Adults

#### Integrated Studies Program

Integrated Studies Programs for mid-career adults are cohort-based, employer-sponsored undergraduate degree completion opportunities leading to the bachelor of general studies degree. A flexible admission policy allows recognition of non-traditional learning experiences and a set curriculum enables degree completion within a pre-established time frame (usually three years) while candidates continue to work full time.

Mature applicants with a minimum of 10 years of work experience, and employer support to complete an undergraduate degree, are encouraged to visit [www.sfu.ca/integratedstudies](http://www.sfu.ca/integratedstudies). For information, see "Integrated Studies Program" on page 90.

#### SFU NOW: Nights or Weekends

SFU NOW: Nights or Weekends provides flexibly-scheduled Simon Fraser University degree courses for working adults who would like to complete an undergraduate degree, or enrol in individual courses for personal or professional interest. SFU NOW is designed for adults who work full-time, have several years of work experience, and who cannot access university classes during the day. Classes are offered in the evenings and on weekends at the Vancouver campus. A range of classes is available, and students may complete one or more to fit busy lives and schedules. All SFU NOW classes are regular Simon Fraser University credit courses. Regular tuition and ancillary rates apply.

To enrol in SFU NOW courses, students will need to be admitted to Simon Fraser University either by meeting the university's regular admission requirements and following regular admissions procedures, or by applying as a mature student (see "Mature Student Entry" on page 22).

Visit [www.sfu.ca/sfunow](http://www.sfu.ca/sfunow) for further information and for details about admissions and enrolment.

## British Columbia and Yukon Applicants

Applicants from British Columbia or Yukon may be admitted from

- secondary school (see below)
- community college (see "Admission from BC and Yukon Community Colleges" on page 21)
- another university (see "BC University Transfer" on page 21)

Several special categories of admission also exist for British Columbia applicants (see "Special Categories" on page 22).

### Admission from British Columbia and Yukon Secondary Schools

All applicants (except as noted) must graduate from secondary school before entering Simon Fraser University.

#### Minimum Admission Requirements

The minimum admission average will vary depending on the number of applications received, and on spaces available. This minimum is determined by the

respective faculty, but in no case will be less than 67%.

Actual final percentage marks will be used whenever available. If not given, the following equivalents are used to compute the average (for BC high school admission only). A = 4.0 or 91%; B = 3.0 or 79%; C+ = 2.5 or 70%; C = 2.0 or 64%

If a grade 12 course has a provincial examination, the final mark must include the exam mark. The provincial exam policy is currently under review. For current information, visit <http://students.sfu.ca/admission>.

### BC and Yukon grade 11 and 12 course requirements

- all applicants must meet the *general admission requirements as listed below*
- *faculty requirements* may also apply (see below)
- BC and Yukon secondary school applicants must meet the English language and literacy admission requirement (see "English Language and Literacy Requirements" on page 18), and the quantitative and analytical skills requirement (see "Quantitative and Analytical Skills Requirements" on page 19)

## UNDERGRADUATE

#### General Requirements

<b>Grade 11</b> (not used to calculate admission average)	<ul style="list-style-type: none"> <li>• English 11 or Français première langue 11</li> <li>• Language 11 (includes Beginner's Language 11, American Sign Language 11 or 12, and Language 12 courses)</li> <li>• Principles of Mathematics 11 (Applications of Mathematics 12 is acceptable for admission to some programs)</li> <li>• Science 11 (includes Applications of Physics 12, Biology 11, Chemistry 11, Earth Science 11, Forests 11, IB Environmental Systems 11, Principles of Physics 11)</li> </ul>
<b>Grade 12</b>	English 12 or English 12 First Peoples or Français première langue and three provincially examinable grade 12 courses: <ul style="list-style-type: none"> <li>• BC First Nations studies 12</li> <li>• English literature 12</li> <li>• French or Français langue seconde 12</li> <li>• German 12</li> <li>• History 12</li> <li>• Japanese 12</li> <li>• Mandarin 12</li> <li>• Principles of Mathematics 12</li> <li>• Punjabi 12</li> <li>• Spanish 12</li> </ul> <i>Science 12 courses</i> <ul style="list-style-type: none"> <li>• Biology 12</li> <li>• Chemistry 12</li> <li>• Geography 12</li> <li>• Geology 12</li> <li>• Physics 12</li> </ul>

IB and AP courses – all standard and higher level IB courses may be used for admission. All AP courses may be used for admission. For IB and AP transfer credit, see "Advanced Placement Program and International Baccalaureate" on page 25.

#### Faculty Requirements

<b>Applied Sciences</b>	<i>Computing Science; Geographic Information Science; General Studies</i> <ul style="list-style-type: none"> <li>• principles of mathematics 12</li> <li>• one of biology 12, chemistry 12 or physics 12</li> </ul> <i>Engineering Science</i> <ul style="list-style-type: none"> <li>• principles of mathematics 12</li> <li>• chemistry 12</li> <li>• physics 12</li> </ul>
<b>Arts and Social Sciences</b> All programs	<ul style="list-style-type: none"> <li>• applications of mathematics 12 may be substituted for principles of mathematics 11</li> </ul>
<b>Business Administration</b>	<ul style="list-style-type: none"> <li>• principles of mathematics 12</li> </ul>
<b>Communication Art and Technology</b>	<i>Communication</i> <ul style="list-style-type: none"> <li>• applications of mathematics 12 may be substituted for principles of mathematics 11</li> </ul> <i>Contemporary Arts</i> <ul style="list-style-type: none"> <li>• applicants may have portfolio/auditions requirements; visit <a href="http://www.sfu.ca/sca">www.sfu.ca/sca</a></li> </ul> <i>Interactive Arts and Technology</i> <ul style="list-style-type: none"> <li>• principles of mathematics 12</li> </ul> <i>TechOne</i> <ul style="list-style-type: none"> <li>• principles of mathematics 12</li> </ul>
<b>Education</b>	<i>Bachelor of General Studies (Education)</i> <ul style="list-style-type: none"> <li>• applications of mathematics 12 may be substituted for principles of mathematics 11</li> </ul>
<b>Environment</b>	<i>Geography</i> <ul style="list-style-type: none"> <li>• applications of mathematics 12 may be substituted for principles of mathematics 11</li> </ul>
<b>Health Sciences</b>	<i>Bachelor of Science Program</i> <ul style="list-style-type: none"> <li>• principles of mathematics 12</li> </ul>
<b>Science</b>	<ul style="list-style-type: none"> <li>• chemistry 11</li> <li>• principles of physics 11</li> <li>• principles of mathematics 12</li> <li>• two other science 12 courses</li> </ul>

### Additional Information for BC Secondary School Applicants

#### Independent Schools

The University accepts applications from students attending independent schools adhering to the BC secondary school curriculum. Applicants must have written any secondary school examinations administered by the provincial Ministry of Education in courses used towards graduation. Examination results will be evaluated in the same manner as if the applicant were attending a public secondary school.

### Advanced Placement or International Baccalaureate Exams

BC secondary school students completing these programs should see "Advanced Placement Program and International Baccalaureate" on page 25.

#### BC Adult Graduation Diploma

This credential is available to adults who complete courses for graduation through a secondary school, adult education centre or a community college.

Applicants who have completed the diploma and who are at least 19 years of age may be admitted if they have completed:

- four courses (16 units) at grade 11 or advanced level to include English, mathematics, social studies or First Nations 12, an experimental or laboratory science; a language other than English is not required
- four courses (16 units) at the grade 12 or provincial level to include English and three additional subjects selected from: biology, mathematics, chemistry, English literature, languages, statistics, geography, history, physics

All four grade 12 or provincial level subjects must be graded: a minimum average of C+ or 67% is required,

based on the Ministry of Education grading scale, however, a higher average may be required.

Entry requirements for specific programs parallel those for BC secondary school graduates.

### BC Calculus Examination Certificate

All prospective Simon Fraser University, University of BC, University of Northern BC and University of Victoria students who have completed, or who are enrolled in, a secondary school calculus course are eligible to write a calculus challenge exam. Students who pass this exam will receive a Simon Fraser University-UBC-UNBC-UVic Calculus Challenge Examination Certificate that permits them to obtain calculus credit at one of these universities. Secondary school students can write the exam prior to entering one of the four participating BC universities. Only one attempt to write this exam is permitted. The exam's resulting grade will be converted into the individual university's equivalent grade.

#### Calculus Course Credit

Students who pass the calculus challenge exam and enrolled at Simon Fraser University may choose to be awarded transfer credit [MATH 151 (3)] or actual course credit for MATH 151. Contact J. Fabricius in the Department of Mathematics to initiate such credit. Students already eligible for transfer credit because of high AP or IB scores will keep this eligibility regardless of their exam score and can waive the exam score and/or credit.

#### Examination Locations, Schedule

Each year a university will host the calculus challenge examination, alternating between Simon Fraser University and the University of British Columbia. The June exam is held at participating high schools, or at the host university.

#### Application to Write the Exam

Application to complete the exam must be made to the mathematics department of the university that is hosting the examination in that year.

#### Examination Information

The exam is three hours in duration. For further enquiries about writing the calculus examination and the Calculus Examination Certificate, contact: Calculus Challenge Examination, Department of Mathematics, 8888 University Drive, Simon Fraser University, Burnaby, BC, V5A 1S6; 778.782.3332 Tel; 778.782.4947 Fax; or email [fabriciu@sfu.ca](mailto:fabriciu@sfu.ca).

### Upgrading BC Grade 12 Grades

Applicants who wish to improve their BC grade 12 course grades may do so in accordance with Ministry of Education policies, except that the final grade in a provincially-examinable course may not be increased by completing an equivalent college course. For example, an applicant who has achieved a mark of 66% in principles of mathematics 12 may not count in her/his admission average a subsequent, higher grade (say 'B' or 73%) in an ABE provincial level mathematics course completed through a college.

## Admission from BC and Yukon Community Colleges

BC and Yukon community college applicants must have successfully completed 24 units of transferable course work with a minimum 2.0 grade point average. Meeting this minimum does not, however, guarantee admission because the average required for admission to most programs is higher.

Applicants who met the University's admission requirements after completing grade 12 may be admitted on the basis of their secondary school grades provided that they have attempted fewer than 24 units of transfer credit. However, they will not be admitted if they present three or more transferable courses equal to nine or more units with an average of less than 2.0 or 60%.

## Specific Faculty/Program Admission Requirements

The faculties and schools listed below require additional specific course prerequisites for admission. For more detailed information, please refer to the faculty-specific pages of this Calendar.

### Business Administration, Faculty of

Students planning to enter the BBA degree program must meet the general University entrance requirements, including transferable equivalents to the following courses:

BUEC 232-4  
BUS 237-3, BUS 251-3, BUS 272-3  
ECON 103-4, ECON 105-4  
MATH 157-3 (or MATH 150-3 or MATH 151-3 or MATH 154-3)  
and two of ENGL 101-3, 102-3, 103-3, 104-3, 105-3, 199-3, PHIL 001-3, 100-3, 120-3.

A minimum grade of C- is required in each of the above mentioned courses. Most transfer students enter the University's Faculty of Arts and Social Sciences before they are approved into the Faculty of Business Administration (see "Faculty of Business Administration" on page 143).

### Computing Science, School of

Students applying for the computing science program may be admitted directly based on college grades, or may be offered general University admission with the opportunity to apply for later admission based on Simon Fraser University grades.

For direct entry from college, students must complete 24 units of transferable work; including one mathematics course and two computing courses, or one computing course and two mathematics courses that will receive the following transfer credit:

- MACM 101-3, 201-3, MATH 151-3, 152-3 and 240-3 (or 232)
- CMPT 125-3, (or 126-3 or 128-3), 150-3, 225-3, 250-3 and 275-4 (or 276-3)

Please direct email queries to [csadvise@cs.sfu.ca](mailto:csadvise@cs.sfu.ca).

### Engineering Science, School of

Students planning to enter the BASc degree program must complete at least 24 units in transferable science or engineering courses.

### Health Sciences, Faculty of

Students planning to enter the BA and BSc degree program in health sciences must complete at least 24 units of transferable work. Recommended courses for students intending to complete the BSc in health sciences are BISC 101-4, 102-4 and 202-3, CHEM 121-4 and 122-2, STAT 201-3 or 203-3.

Recommended courses for students intending to complete the BA in health sciences are SA 101-4 (or 150-4), STAT 201-3 (or 203-3), human biology.

### Interactive Arts and Technology, School of

Students complete at least 24 units of transferable course work, including at least 18 units comprised of three units from each of the following areas: CMPT, FPA, CMNS, or IAT (see "Route 3" on page 159).

In routes 2 and 3, students apply to either the BA or BSc program after completing at least 18 units of the lower division requirements listed below or equivalents.

### Science, Faculty of

Students planning to enter the BSc degree program must have the following transfer credit (minimum grade of C on each):

- MATH 100-3
- two of BISC 100-4, CHEM 110-3 or 111-4, PHYS 100-3

## Transfer Credit Guide

A transfer guide listing all first and second year (lower division) transferable courses and the Simon Fraser

University equivalents is accessible through the British Columbia Council on Admissions and Transfer website at [www.bctransferguide.ca](http://www.bctransferguide.ca)

## Associate of Arts/Science Degree Holders

Graduates holding Associate of Arts or Associate of Science degrees from BC colleges recognized by the BC Ministry of Advanced Education will receive preference in the admission process as follows:

- The minimum average for Associate Degree students will be established each term at a level 0.25 GPA points less than that required for regular transfer students, but shall not be less than 2.00.
- Transfer credit will be given for all individually transferable courses. When the individually assigned credit from all sources totals less than 60 units, additional general elective credit will be assigned to bring the transfer credit total to 60 units.

BC and Yukon community college applicants must meet the English language and literacy, and quantitative and analytical skills requirement. See "English Language and Literacy Requirements" on page 18.

## BC University Transfer

Applicants in good standing at other recognized BC universities may be considered for admission upon successful completion of 24 units of transferable course work with a minimum grade point average of 2.0. Meeting this minimum grade point average does not, however, guarantee admission because the average required for admission to most programs is higher. Other requirements are the same as those for students transferring from a BC or Yukon community college. The following conditions apply:

- BC university students must meet the English language and literacy, and quantitative and analytical skills requirement (see "English Language and Literacy Admission Requirement" and "Quantitative and Analytical Skills Requirements" on page 19)
- studies must have been completed at a fully accredited institution granting baccalaureate or higher degrees
- applicants who have been required to withdraw from the transferring institution or whose status, if they were attending Simon Fraser University, would be on Academic Probation will be admitted only if they have completed a further year (24 units) or more of transferable work, with a GPA of at least .50 points above the current admission GPA.
- Simon Fraser University supports the 'Pan-Canadian Protocol' on transferability of first and second year arts and science courses from any recognized Canadian university

Applicants must send copies of detailed course outlines to assist with the evaluation of transfer credit.

## BC Visiting Students

Students of other BC universities may apply for admission to complete specified courses for subsequent transfer back to the 'home' university. Applicants should apply in the normal manner and will be evaluated as University transfer applicants (see above). No transfer credit or enrolment priority is awarded to visiting students.

## BC University Degree Holders

Applicants holding degrees may be admitted to undergraduate studies to undertake a second or subsequent degree at the bachelor's level, or to undertake a diploma or certificate. Applicants may also gain admission as special students to complete

undergraduate courses which are not for credit toward a degree, diploma or certificate program.

Applicants with baccalaureate degrees from recognized universities will be admitted with a minimum average of 2.0 or 60% based on the last two years of degree (or post degree) work attempted.

Once admitted, applicants will need program approval directly from the department or school in which they intend to pursue a second degree, diploma or certificate program. See <http://students.sfu.ca/admission/seconddegree> for further information.

Applicants to a degree program must meet the English language and literacy, and quantitative and analytical skills requirements. See "English Language and Literacy Requirements" on page 18 and see "Quantitative and Analytical Skills Requirements" on page 19.

## Special Categories

Simon Fraser University is interested in extending learning opportunities to British Columbia residents who may not qualify under the regular categories of admission. The number of such admissions is limited by the availability of resources, and is not automatic. Four special categories are available — **mature student entry**, **early entry**, **concurrent studies** and **irregular admission**.

Only Canadian citizens or permanent residents are eligible.

## Mature Student Entry

Applicants aged 23 or older who have attempted less than 24 units of post-secondary transferable course work, and who do not meet regular admission requirements, *may* be given consideration as mature students. In addition to normal documents, mature applicants must submit a personal information profile and at least one letter of reference (see "Diverse Qualifications Admission Policy" on page 19). Applicants who have successfully completed some post-secondary work, usually three to four transferable academic courses (9-12 units), and have ensured that they have no background deficiencies in essay writing, mathematics, etc. will receive preference.

The English language and literacy, and quantitative and analytical skills requirements for admission do not apply to mature applicants. However, mature applicants whose first language is not English are expected to meet the English Language and Literacy entrance requirement prior to admission (see "English Language and Literacy Requirements" on page 18).

Mature applicants must meet the writing, quantitative and breadth requirements for graduation (see "Writing, Quantitative, and Breadth Requirements" on page 7).

Applicants who have attempted 24 or more of transferable post-secondary work are ineligible for mature student entry but may be considered for admission as transfer students.

## Concurrent Studies

Students with superior academic records (90% or higher) may apply for limited admission to complete

one or two university courses while still attending secondary school. Admission is limited to one term, with a maximum of two courses in the term. Credit for these courses may be applied to academic degrees if the student is subsequently admitted to a regular program at the University.

An admission application form for concurrent students is available at <http://students.sfu.ca/forms>.

Applications should be supported by a letter of recommendation from the school principal or designate, and an official copy of the academic record. Admission under this category is at the discretion of the director of admissions and the respective faculty dean.

## Irregular Admission (Education)

Applicants may apply for irregular admission, giving limited access to certain courses offered by the Faculty of Education. This category allows certified teachers in BC, who seek professional development opportunities, to avoid long lead times and full documentation of their academic histories. Normal admission deadlines are waived, but published minimum admission requirements apply. Irregular admission students may not pursue a credential at Simon Fraser University (e.g. a degree) and receive no enrolment priority. They may complete no more than eight units per term to a maximum of 16 in total. Eligibility to re-enrol after each term is subject to the approval of the Faculty of Education. For further information, contact the Faculty of Education at 778.782.5830.

## Applicants from Other Canadian Provinces

Information for applicants who are following Advanced Placement or International Baccalaureate programs is on page 25.

### Canadian High Schools

Applicants from Canadian high schools outside of British Columbia and Yukon will be considered for

admission on the basis of their academic program leading to high school graduation and university entrance. Students will be required to present English at the senior level and all required courses for their intended university program.

Completion of high school graduation from a recognized secondary school is mandatory and a

minimum average of 67% or equivalent is required. Because of enrolment limitations, the academic average that is required for most programs is higher than 67%.

### Canadian High School Requirements

#### Ontario

Applicants from Ontario must present an Ontario secondary school diploma with a minimum of six 4U/4M courses, including ENG4U.

#### Quebec

##### CEGEP Students

Applicants from CEGEP must present either a completed DEC or at least one year of an approved academic program.

##### Grade 12 Students

These applicants must present a grade 12 graduation diploma with standing in a minimum of six appropriate academic grade 12 courses, including English.

#### Alberta, Saskatchewan, Manitoba, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador, Northwest Territories, Nunavut

Applicants from these provinces must present a grade 12 graduation diploma with standing in a minimum of five appropriate academic grade 12 courses, including English.

*Detailed information about appropriate academic courses is not presented in this Calendar because the list is regularly updated. To see the most recent course list, please visit <http://students.sfu.ca/admission>*

Canadian secondary school applicants must meet the English language and literacy admission requirement (see "English Language and Literacy Admission Requirement" on page 18), and the quantitative and analytical skills requirement (see "Quantitative and Analytical Skills Requirements" on page 19)

### Specific Faculty Requirements

The following specific Faculty requirements are expressed in BC/Yukon terms. Simon Fraser University's Undergraduate Admissions will determine course equivalency. These requirements are in addition to those listed above for each province.

#### Faculty of Applied Sciences

*Computing Science, Geographic Information Science, General Studies*

- principles of mathematics 12
- one of biology 12, chemistry 12, physics 12

##### Engineering Science

- principles of mathematics 12
- chemistry 12
- physics 12

#### Faculty of Arts and Social Sciences

For all programs,

- applications of mathematics 12 may be substituted for principles of mathematics 11

#### Faculty of Communication, Art and Technology

*Contemporary Arts*

- applicants may have portfolio and/or audition requirements; for further information, please visit [www.sfu.ca/sca](http://www.sfu.ca/sca)
- applications of mathematics 12 may be substituted for principles of mathematics 11

*Communication*

- applications of mathematics 12 may be substituted for principles of mathematics 11

*Interactive Arts and Technology*

- principles of mathematics 12

*TechOne*

- principles of mathematics 12

#### Faculty of Business Administration

- principles of mathematics 12

#### Faculty of Education

*Bachelor of General Studies (Education)*

- applications of mathematics 12 may be substituted for principles of mathematics 11

#### Faculty of Environment

*Geography*

- applications of mathematics 12 may be substituted for principles of mathematics 11

#### Faculty of Health Sciences

*Bachelor of Science Program*

- principles of mathematics 12

#### Faculty of Science

All programs require

- chemistry 11
- principles of physics 11
- principles of mathematics 12
- two other science 12 courses

## Applicants from Canadian Colleges

The following requirements refer to Faculty of Arts and Social Sciences admission, except where stated.

Applicants who have attended a community college in an articulated university transfer program may be considered for admission upon successful completion of 24 units of transferable course work with a minimum grade point average of 2.0. Meeting this minimum grade point average does not, however, guarantee admission because the average required for admission to most programs is higher.

Applicants who met the University's admission requirements after completing grade 12 may be admitted on those requirements, provided that they have attempted less than 24 units of transfer credit. However, they will not be admitted if they present three or more transferable courses equal to nine or more units with an average of less than 2.0 or 60%.

English Language and Literacy requirements, and Quantitative and Analytical Skills requirements (see page 19) apply to Canadian College transfer students on a university transfer program seeking entry to degree programs.

Other requirements are parallel to those for BC college transfer students (see "Admission from BC and Yukon Community Colleges" on page 21), except that associate degrees are given no special priority.

Transfer credit may be granted to a maximum of 60 units based on approved transfer lists or advice from the appropriate Simon Fraser University departments.

### Quebec CEGEP

CEGEP applicants must present either a completed DEC or at least one year of an approved academic program.

CEGEP students must meet the English Language and Literacy, and Quantitative and Analytical Skills requirements and (see page 19).

### Institutes of Technology/Colleges of Applied Arts and Technology

Students with completed two or three year diplomas from academic programs at Canadian institutes of technology, including BCIT, or colleges of applied arts and technology may be considered for admission. Transfer credit may be granted based on overall academic background and on the recommendations of the appropriate departments at Simon Fraser University. Transfer credit is generally granted only for completed technical programs as a block and is not evaluated on a course by course basis.

Applicants from institutes of technology/colleges of applied arts and technology must meet the English Language and Literacy, and Quantitative and Analytical Skills requirements (see page 19).

### Canadian University Transfer

Applicants in good standing at other recognized Canadian universities may be considered for admission upon successful completion of 24 units of transferable course work with a minimum grade point average of 2.0. Meeting this minimum grade point average does not, however, guarantee admission because the average required for admission to most programs is higher. Other requirements are the same as those for students transferring from a BC university or college. The following conditions apply:

- students must meet the English Language and Literacy, and Quantitative and Analytical Skills requirements (see page 19).
- studies must have been completed at a fully accredited institution granting baccalaureate or higher degrees
- applicants who have been required to withdraw from the transferring institution or whose status, if they

were attending Simon Fraser University, would be on academic probation will be admitted only if they have completed 24 units or more of transferable work, with a GPA of at least .50 points above the admission GPA.

- Simon Fraser University supports the Pan-Canadian Protocol on transferability of first and second year arts and science courses from any recognized Canadian university.

Applicants must send copies of detailed course outlines to assist with the evaluation of transfer credit.

### Canadian Visiting Students

Students of other Canadian universities may apply for admission to complete specified courses for subsequent transfer back to the 'home' university. Applicants should apply in the normal manner and will be evaluated as University transfer applicants (see above). No transfer credit or enrolment priority is awarded to visiting students.

### Canadian University Degree Holders

Applicants holding degrees from a recognized Canadian University outside of BC may be admitted to undergraduate studies to undertake a second or subsequent degree at the bachelor's level, or to undertake a diploma or certificate. Applicants may also gain admission as special students to complete undergraduate courses which are not for credit toward a degree, diploma or certificate program. Applicants with baccalaureate degrees from recognized universities will be admitted with a minimum average of 2.0 or 60% based on the last two years of degree (or post degree) work attempted.

Degree program applicants must meet the English Language and Literacy, and Quantitative and Analytical Skills requirements (see page 19).

## International Applicants

International applicants may be admitted from secondary school, from a college, from a university, or applicants may already hold a university degree. Refer to those sections that follow.

Some schools offer programs that comply with international rather than national rules (i.e. International Baccalaureate). Students from these schools will be evaluated by international standards.

Some schools offer an educational program that is different from the traditional program in that country – for example, a US 12 program in Saudi Arabia. In this case, please refer to the United States admission requirements.

International applicants must meet the English Language and Literacy, and Quantitative and Analytical Skills requirements (see page 19).

### Other Requirements

#### Academic Documents

Students must arrange to send official transcripts of academic records from all schools and colleges attended to Simon Fraser University. Replaceable documents will not be returned. Irreplaceable documents will be returned to the student personally, on request. If the student's documents are not in either English or French, Simon Fraser University

requires an official translation, certified by an educational official of the student's country, an official of a Canadian Education Centre, or a Canadian consular or embassy official. Translations made by the student, relatives or friends will not be accepted. For international applicants residing in BC, translations should be completed by a member of the Society of Translators and Interpreters of British Columbia (please view their website at [www.stibc.org](http://www.stibc.org)), or through MOSAIC Translation Services at [www.mosaic-trans.com](http://www.mosaic-trans.com).

### Secondary School Applicants

Completion of minimum requirements does not guarantee admission to any course, program, department or faculty when the number of qualified applicants exceeds the number that, in the opinion of the University, can be accommodated. The University reserves the right to select from among qualified applicants. Visit <http://www.students.sfu.ca/admission/requirements> or a current list of admission requirements by country/region.

### International University or College Transfer

The studies presented for transfer credit must be acceptable to a leading university in the home country

toward a program similar to the one to which admission is sought. For further requirements, see "Canadian University Transfer" on page 24.

### International Institutes of Technology

Students with completed two or three year diplomas from academic programs at recognized international institutes of technology may be considered for admission. A competitive admission average is required for most programs. Transfer credit may be granted based on overall academic background and on the recommendations of the appropriate departments at Simon Fraser University. Transfer credit is generally granted only for completed technical programs as a block and is not evaluated on a course-by-course basis. International applicants must meet the English Language and Literacy, and Quantitative and Analytical Skills requirements (see "English Language and Literacy" and "Quantitative and Analytical Skills Requirements" on page 19).

### International University Degree Holders

See "BC University Degree Holders" on page 21.



## Advanced Placement Program and International Baccalaureate

Advanced Placement (AP) and International Baccalaureate (IB) courses may be used in place of equivalent provincially-approved grade 12 courses as listed under "British Columbia and Yukon Applicants" on page 20. The chart on the right shows how AP and IB exam grades will be converted for the purpose of determining a student's admission.

Transfer credit and/or advanced standing will be granted to students who complete AP examinations, in certain transferable subjects, with grades of 4 or 5. Course challenge (credit by examination) is also available in some disciplines.

Students who have completed the International Baccalaureate Diploma will receive a complete year of transfer credit (30 units). Transfer credit will be awarded for all standard level and higher level subjects that are passed with a grade of 4 or higher. If the total specific assigned credit for all subjects totals less than 30 units, additional general elective credit will be assigned to bring the transfer credit total to 30 units. For a detailed list of credit that is granted for IB and AP courses, please visit <http://students.sfu.ca/admission/requirements/>.

Students who are not completing the full IB diploma program must be admissible on another program

leading to secondary school graduation program. Transfer credit will be granted for higher level subjects with a final grade of 5 or higher.

AP Exam Grade	IB Exam Grade	Equivalent Percentage
5	7	96
–	6	90
4	5	86
3	–	80
–	4	76
2	3	70

## Reactivation and Readmission

Students who have previously attended may apply for reactivation or for readmission.

### Reactivation

You must fill out the reactivation form on-line at <http://students.sfu.ca/admission/readmission> if you meet the following criteria.

- absent from the University for three or more consecutive terms and were not required to withdraw in your last term at Simon Fraser University, and completed no further academic studies at a post-secondary institution during the time away from Simon Fraser University; or
- all your undergraduate programs at Simon Fraser University are complete or will be completed by the end of the term.

### Readmission

The following conditions require that you apply for readmission before enrolling in further courses:

- completion of further academic studies at a post-secondary institution during the time you were away from Simon Fraser University; or
- required to withdraw or placed on extended withdrawal from Simon Fraser University; or
- voluntary withdrawal from your first term of attendance. If you are a new student who withdraws before completing any course work, you are required to apply for readmission if you wish to enrol in a subsequent term. (This does not apply if you withdraw under extenuating circumstances, after the application deadline for the subsequent term), or
- you are a concurrent studies student who completes a term and wishes to continue at the University; or
- you previously attended as a visiting or exchange student and now wish to complete a Simon Fraser University credential.

If any of these conditions are present, you must apply for readmission on-line at [students.sfu.ca/admission/readmission](http://students.sfu.ca/admission/readmission) by the applicable application deadlines.

### Holders of Simon Fraser University Bachelor's Degrees

In addition to submitting an application for readmission or reactivation, former Simon Fraser University students who plan to undertake a program of study leading to an additional bachelor's degree or

toward a diploma are urged to obtain program approval from the appropriate department and faculty as soon as possible. Such students entering certificate programs should obtain approval from their faculty advisors.

Students holding Simon Fraser University bachelor's degrees may also apply for reactivation to undertake undergraduate courses as special students if no further academic studies at a post-secondary institution were completed during the time away. Normally, no approval is required.

### Readmission of Involuntarily Withdrawn Students

A former student who is involuntarily withdrawn from the University (required to withdraw or placed on extended withdrawal) may apply for readmission based on performance achieved in external academic course work completed after she/he last enrolled at Simon Fraser University (see below for details).

#### Readmission after Required to Withdraw

A former student who is required to withdraw (RTW) shall be eligible for readmission if she/he completes, externally, further transferable academic work according to the following schedule (any of the following five options):

- 12-17 units with a minimum 3.50 GPA (grade point average)
- 18-23 units with a minimum 3.00 GPA
- 24-29 units with a minimum 2.75 GPA or with the acceptance GPA (see *Acceptance GPA* below) whichever is higher
- 30 or more units with the acceptance GPA (see *Acceptance GPA* below)
- a completed two year technical diploma with a 70% minimum average and at least 12 units of transferable course work with a minimum 2.75 GPA. (The transferable work may be within the diploma program or supplementary to it.)

#### Readmission of Students on Extended Withdrawal (PW)

A former student on extended withdrawal (PW) shall be eligible for readmission if she/he completes further transferable academic work according to the following schedule (any of the following five options):

- 24-35 units with a minimum 3.50 GPA

- 36-47 units with a minimum 3.00 GPA
- 48-59 units with a minimum 2.75 GPA or with the acceptance GPA (see *Acceptance GPA* below), whichever is higher
- 60 or more units with the acceptance GPA
- a completed two year technical diploma with a 70% minimum average and at least 24 units of transferable course work with a minimum 2.75 GPA. (The transferable work may be within the diploma program or supplementary to it.)

#### Acceptance GPA

The acceptance GPA refers to the minimum admission GPA in effect for that term for British Columbia college transfer students, according to enrolment limitation measures. The acceptance GPA may vary.

#### Readmission Deadlines

Deadlines for consideration shall be the same as for other students seeking readmission (see "Application Deadlines" on page 18).

#### Duplicate Courses for Readmission

A repeated course attempt which was passed with a C grade or higher prior to leaving Simon Fraser University will not count in the unit or GPA calculations for readmission. Students may not complete courses at the college that are a lower level than those completed at Simon Fraser University for readmission (e.g. the student has successfully completed MATH 157 at Simon Fraser University and/or MATH 158; therefore the student may not take MATH 100, MATH XXX or MATH 1XX for readmission).

#### Final Grades Evaluated for Readmission

Evaluation for readmission is based only on final grades (i.e. courses in progress are not evaluated).

#### Transfer Credit on Readmission

Credit for transferable courses shall be granted on readmission, subject to a C minimum grade in each course, and subject to normal transfer credit limits.

#### Standing on Readmission

If readmitted, a student who was previously involuntarily withdrawn from the University (RTW or PW) is placed on academic probation (OAP) and shall again be subject to the conditions described above.

# Student Enrolment

Enrolment is the process of formally assigning and recording a student's enrolment in a course(s). Enrolment is open only to those who have been admitted or readmitted to Simon Fraser University, or who are eligible for reactivation. An exception is that special audit students need not be formally admitted before enrolment (see page 210).

In the trimester system, a student must enrol for any combination of terms or sessions during an academic year. Students have access to the enrolment system based on the number of units completed and in progress, and on the student's cumulative grade point average. Students are assigned an appointment date and time when access is activated.

**Note:** The enrolment procedure for designated off-campus programs and distance education courses is the same as for on-campus courses. Specific program details are available in brochures published each term. See "Continuing Studies" on page 210.

Information about how to enrol and details about the course's day, time, place and instructor is provided in the *Undergraduate Schedule of Classes and Examinations* and on the web at <http://sis.sfu.ca>. The University reserves the right to change arrangements without notice although it will endeavor to inform students who are affected by such changes.

## Library/Identification Card

A student library/identity card is provided to enrolled or enrolled students. This card is required when borrowing books from the Library and for other on-campus identification purposes. In the event that this card is lost, destroyed or damaged, a replacement card may be obtained from Student Services upon payment of a fee.

## Academic Advising and Student Success

3200 Maggie Benston Student Services Centre,  
778.782.4356 Tel, 778.782.4969 Fax,  
<http://students.sfu.ca>, Monday to Thursday 9 am – 6 pm, Friday 10 am – 4:30 pm

This office provides advice for newly admitted and continuing first and second year students who have not declared a specialization (for a major, minor, double major, joint major or an honors program see page 6). Academic advisors assist with course selection and program planning in any faculty. Advisors also assist students in academic difficulty to provide assistance about policies related to academic standing and continuance, course withdrawals, readmission after being required to withdraw due to poor academic performance, and retroactive withdrawals applications.

## Definitions

The following are the most commonly used terms that new students may find confusing.

### Students

Simon Fraser University does not classify students as either full time or part time although there are varying course load requirements for many types of financial aid (see "Financial Aid and Awards" on page 36).

### Continuing Students

Students who enrolled for one or more of the last three terms and who are eligible to continue will be

advised of enrolment procedures and deadlines well in advance of each term.

### Former Students

Under certain conditions, former students submit formal application for readmission in order to continue academic studies at the University (see "Admission and Readmission" on page 17).

### New Students

After the application for admission has been assessed, the applicant will be advised of admission. If admitted, the student receives instruction on the procedure to enrol in courses.

### Qualifying Student

See "1.3.6 Admission as a Qualifying Student" on page 220.

### Regular Student

A regular student is one proceeding to a degree, diploma or certificate in any faculty. A regular student may already hold one or more bachelor's degrees.

### Special Audit Student

Students who do not apply for University admission under the general admission regulations but who wish to audit credit courses may be given entry as special audit students. Special application procedures apply; see "Special Audit Student" on page 210.

### Special Student

A student already holding a first degree may, as a special student, enrol in undergraduate courses only. Credit for these courses may not be applied toward completion of any certificate, diploma, undergraduate or graduate credential at Simon Fraser University. First time applicants wishing to enrol as special students and students holding a first degree who have previously attended Simon Fraser University should see "Admission and Readmission" on page 17.

### Visiting and Exchange Students

A visiting student is a bona fide student of another accredited institution who is permitted to complete credit courses only toward a degree, certificate or diploma at the home institution. Applicants who wish to become visiting students must meet all admission requirements and must submit a letter of permission from the home institution's registrar. A visiting student wishing to become a regular Simon Fraser University student must reapply and meet admission requirements in effect at that time.

## Academic Year

### Trimester

Simon Fraser University offers three full terms or semesters within the twelve month calendar year.

### Term

The calendar year is divided into three academic terms of 16 weeks each. Each term has its own enrolment and final examinations. All academic courses are one term long, or a shorter session such as intercession or summer session. Students may enter at the beginning of any term and attend one, two or three terms in a year. By attending continuously, a student who entered from BC high school grade 12 (or equivalent) in the fall 2009 term could graduate with a bachelor's degree at the end of the spring 2012 term. The following illustrates an academic year.

fall term: September – December

spring term: January – April

summer term: May – August

intercession: May – June

summer session: July – August

To increase the accessibility of the summer program (May-August) to teachers and others, the summer term is enriched by two, two-month sessions called intercession (May-June) and summer session (July-August). These programs are offered in addition to the regular four month summer term.

### Term Codes

The University's student information system uses numeric codes for terms. Students will often encounter these codes when using <https://sis.sfu.ca>, the on-line student services portal. Here are the term codes for the upcoming year:

- 1097 = fall 2009
- 1101 = spring 2010
- 1104 = summer 2010

The codes can be interpreted as follows:

- 1 represents the 21st century
- 09 = year
- the final digit is the term: 1 for spring, 4 for summer and 7 for fall.

### Levels

Undergraduates in Canada are traditionally classified as first year (freshman), second year (sophomore), third year (junior), or fourth year (senior) students. Since 'year' does not apply to the trimester system, the student's progression is expressed in levels. 'Level' refers to the status of a student's program.

Each level normally equals one term's work with a full course load; a typical four year bachelor's degree program consists of eight levels. The first four (i.e., the first 60 units) are lower divisions. Levels 5 and above are upper divisions. The term 'level' is not used for graduate programs. Usually students in levels 1 and 2 complete 100 series courses; those in levels 3 and 4 complete 200 series courses; those beyond level 4 complete 300 and 400 series courses.

Four Year General Degree Program			
	Level	Units	Traditional Terms
Lower Levels	1	15	first year or freshman
	2	15	
	3	15	second year or sophomore
	4	15	
Upper Levels	5	15	third year or junior
	6	15	
	7	15	fourth year or senior
	8	15	
Total 120 units			

Four Year Honors Degree Program			
	Level	Units	Traditional Terms
Lower Levels	1	15	first year or freshman
	2	15	
	3	15	second year or sophomore
	4	15	
Upper Levels	5	18	third year or junior
	6	18	
	7	18	fourth year or senior
	8	18	
Total 132 units			

## Courses

### Subject

A subject (or 'discipline') is a body of knowledge with arbitrary boundary lines, e.g. philosophy, chemistry or psychology. For convenience, professors of a subject are usually grouped together in a department.

**Prerequisite**

A prerequisite, also called a requisite, is a requirement needed to enrol in a course.

**Corequisite**

A corequisite is a course to be completed at the same time as another course.

**Division**

Division relates to undergraduate courses: those numbered 001 to 299 inclusive are lower division courses; those numbered 300 to 499 are upper division courses. Graduate courses are numbered in the 500 to 999 series. In certain instances, upper division courses may be completed in the lower levels and lower division courses in the upper levels. Refer to specific regulations pertaining to requirements for degrees, certificates or diplomas.

**Course Numbering**

Each subject is divided into courses usually offered in term length units. Each course is identified by a subject name followed by a course number, the number of units, and course title, e.g. ENGL 103-3 Introduction to Drama. The first course number digit represents the division of the course; the fourth digit indicates the units. For example, ENGL 103-3 is a first division course offering three units.

**Lectures, Tutorials and Laboratories**

Although there are variations among departments, instruction in lower division courses combines a large lecture section with small tutorial groups. The large lecture enables as many students as possible to hear the very best teachers. The small tutorial groups provide more personal instruction and an opportunity for discussion of readings and lecture material. A typical course consists of two lectures and one tutorial a week. Notable exceptions are the sciences and languages, where a laboratory may be involved.

**Credit Courses**

These courses carry units and count toward the total required for a degree, certificate or diploma, subject to the regulations governing the credential.

**Credit Hours**

See "Units" below.

**Units**

Units, formerly known as credits, are assigned to each course; most have three units. A normal course load for full attendance in a term is 15 units. Requirements for credentials (e.g., degrees, diplomas and certificates) are partially expressed as units.

The unit weight is shown for each course as follows.

subject: Mathematics (MATH)

course number: 232

units: 3

**Credit-Free Courses**

These courses carry no credit and do not count toward a degree, certificate or diploma. At times, they are termed 'non-credit courses.'

**Additive Credit**

In courses deemed to have additive credit, the units do not count towards the total units required for a degree. Co-operative Education practicum courses typically have additive credit.

**Distance Education Courses**

Many courses are available as distance education courses. The majority of these are print-based. Some may also have audio and/or video support. Increasingly, educational technologies (e.g. computer conferencing) are being incorporated as courses are developed and revised. The program parallels the campus term system of the University, with the same 16 week period for course completion. For more information, see "Centre for Online and Distance Education" on page 211.

**Obligation to Declare Majors, Minors or Other Areas of Specialization**

Students are expected to obtain formal approval to enter an area of specialization by the time they have earned 60 units. 'Specialization' is a term used to cover programs such as majors, minors, double majors, honors, extended minors, etc. 'Department' refers to the faculty, department, school or unit responsible for a program. There are some other programs (e.g., post baccalaureate diplomas, certificates) which may have additional instruction regarding procedure since the students in these programs fall outside the usual flow of units.

**Undeclared**

This category will be used for any student who, prior to the successful completion of the 61st unit, has not recorded an intended specialization. Academic advising for undeclared students is available from Academic Advising and Student Success.

**Approved**

This category identifies the specialization of a student who is formally approved by the department or signing authority for that specialization and may be granted at the department's discretion or signing authority. This must be done by the 61st unit. Advising for approved students is the responsibility of the department offering the approved specialization(s).

**Course Loads**

The following maximum course loads apply to all students, but certain students may be granted permission by their respective faculties to enrol in course overloads (see below).

**Regular Session**

The maximum course load for all students who are not enrolled for summer session courses only, or intersession courses only and who are not entering their graduating term is as follows:

*Applied Sciences, Arts and Social Sciences, Business Administration or Science* – 18 units  
*Communication, Art and Technology* – 18 units  
*Education* – 20 units  
*Engineering Science* – 22 units (permission of the director is required for course loads below 15 units).  
*Environment* – 18 units  
*Health Science* – 18 units

**Intersession or Summer Session Only**

Students enrolling for the intersession or summer session only may not enrol in programs having a total value in excess of nine units, except where course combinations may require enrolment in a program of 10 units; however, no student will be permitted to undertake a program of more than 10 units of work.

**Summer Term, Intersession, Summer Session Combinations**

Normal course load limits apply to students who enrol in combinations of the above. For course load values only, in the regular summer term the course load value corresponds to the course's units. In the intersession or summer session, the course load value is twice the units because, in the shorter session, classes must meet twice as often or for longer periods to equal the regular term. Therefore, when calculating course load value, note the following example. This does not apply to the regulations for assessment of financial aid and awards.

Course	Units		Course Load Credit
ARCH 371-5 (if completed in summer term)	5	equals	5
ARCH 372-5 (if completed in eight week intersession or summer session)	5	equals	10
<b>Total Course Load</b>	<b>10</b>	<b>equals</b>	<b>15</b>

**Course Overloads**

No student who is on academic probation may enrol in a course overload.

In the Faculty of Applied Sciences, approved majors who wish to enrol in an overload require permission of the director of their school. Other Faculty of Applied Sciences students require permission of the dean of the faculty. In the School of Engineering Science, permission of the director is required for course overloads exceeding 22 units.

In the Faculties of Arts and Social Sciences; Business Administration; Communication, Art and Technology; Education; Environment; and Health Sciences only, a student who requires an overload to fulfil graduation requirements in the term for which he/she is enrolling may be allowed, with the dean's permission, to enrol in an overload.

In the Faculty of Science, a student entering the graduating term who requires specific courses to fulfil graduation requirements in the term for which the student is enrolling, may be permitted to enrol in courses totalling up to 21 units, provided either the cumulative grade point average or the most recent term grade point average is 3.0 or higher.

A limited number of overloads may be approved, by the dean of the faculty in which the student is enrolled, on an individual basis during the course change period.

**Repeated Simon Fraser University Courses**

Where a student repeats a course, the course(s) with the lower grade will be recorded on official records as an excluded course. If the same grade or grade equivalent value is earned for a repeated course, the course that was completed most recently is included in the term grade point average (GPA) and cumulative GPA, and the former course is excluded in the term GPA and cumulative GPA. A student's academic standing for previous terms does not change even though the GPA changes.

When a course is repeated and the unit value has decreased, the student must, in consultation with the department, make up the missing unit component before being credited with the full original units.

**Limits on Repeated Courses**

The number of courses which a student may repeat in a degree program is limited to five. The number of times a student may repeat a course is once. Courses completed at Simon Fraser University for which a student has already received transfer credit from another institution will count within five repeats limit.

Students can only repeat special topics courses, which they have failed, when the topic is deemed to be the same as the one for which the student has already received credit. Normally special topics courses can be repeated because the course content changes with each offering.

## Repeated Transfer Credit

Students may not receive transfer credit for a course which is a repeat of a course passed at Simon Fraser University. At Simon Fraser University, a grade of D and those above it are passing grades.

If a student enrolls for a repeat course, and completes the course with a passing grade, the transfer units will remain on the academic record as a repeat, with a zero credit or unit value. If the course is completed with a failing grade, the transfer units will remain on the academic record. A department may permit units to count for both a transfer course and a Simon Fraser University course, if the course content is judged to be sufficiently different.

Current limits on course repeats, where one course is a Simon Fraser University course, will apply to repeated transfer courses. The implementation of this policy will not affect the method of calculating grade point averages. Current limits on course repeats, where both courses are transfer credit will not apply.

## Courses at Other Institutions/Letters of Permission

Simon Fraser University students who wish to complete academic work at other institutions for undergraduate degree, diploma or certificate credit at this University must obtain permission in advance by applying for a Letter of Permission through Student Services. All students considering requesting a Letter of Permission should consult an academic advisor. The faculty advisor (and the department advisor if a program has been declared) will be contracted by Student Services for approval. Students should allow six to eight weeks for processing of their request. Normally, a Letter of Permission will not be approved retroactively.

Students must have completed a minimum of nine units at Simon Fraser University and must be in good academic standing at the time they submit their request for a Letter of Permission to Student Services. Since standing is achieved once all grades for the term have been received, students may have to wait until their third term at Simon Fraser University to be eligible to complete a course elsewhere.

Permission to complete a course at another institution will not be granted unless a valid academic reason is provided. For example, complete a course in a discipline not offered at Simon Fraser University, such as Czech language. While an approved Letter of Permission guarantees that the credit will count toward the overall credit requirement, it does not guarantee that the credit will meet a specific program requirement.

A Letter of Permission is automatically denied if a student's standing is 'on academic probation' (OAP), 'continued academic probation' (CAP), or 'required to withdraw' (RTW). Courses completed at another institution cannot be used to satisfy Simon Fraser University's minimum residency requirement and will not be included in the CGPA calculation. Therefore, such courses cannot be used to raise standing.

Students must achieve a grade of at least C (2.0 numeric equivalent) or 60% in order to receive transfer credit for courses completed at other institutions. It is the student's responsibility to ensure that an official transcript from the host institution is forwarded to Student Services at Simon Fraser University in order for transfer credit to be granted. Students participating in formal exchange programs should see "International Exchange Programs" on page 215 for more information.

## Course Challenge

Course challenge is a method by which a student may obtain credit for course material learned elsewhere (i.e. outside Simon Fraser University). A maximum of

60 units may be obtained by the combined mechanism of course challenge and transfer credit.

A student must be eligible to enrol in order to enrol for course challenge.

- course challenge is not permitted for a course for which credit has already been obtained at Simon Fraser University or through transfer credit. A student may not enrol in one term for both regular enrolment and course challenge in the same course at the same time, but must select one or the other, and may not change that decision in that term later than ten days following the commencement of University classes
- a student is not entitled to enrol for course challenge if he/she has recorded two challenges as either unsuccessful or unattempted
- a student is not permitted to challenge a course(s) he/she has previously failed at Simon Fraser University
- course challenge is not included in the grade point average
- units through course challenge do not count towards term units or units for government student assistance programs (e.g., Canada Student Loan, BC Student Loan, etc.) or Simon Fraser University administered financial assistance programs including scholarships, bursaries, awards and loans
- a department may elect to offer or not to offer the opportunity for course challenge

Please note the following with regard to course challenges in the Department of French and in the Latin American Studies Program.

With approval, a student may enrol and pay fees for challenge in a specified course sequence in a given language. If the student satisfactorily completes a course in the given language at an advanced sequence level, the department may indicate 'successful' in the preceding course(s) of the sequence in which the student is enrolled for challenge. If the student does not satisfactorily complete the advanced level course, then formal challenge assessment of the preceding level(s) should be undertaken to avoid two challenges without success based solely on the advanced assessment.

## Enrolment for Course Challenge

Any eligible student who wishes to enrol for course challenge must obtain an official course challenge enrolment form from Student Services or the academic department, seek approval of the appropriate department chair to enrol for course challenge in that department, and return the completed form to Student Services or the academic department by the tenth day following commencement of classes. Normally, a student may not complete enrolment for course challenge after the end of the tenth day of classes. During the first ten days of classes, a student may change enrolment in course challenge from one course to another or to regular enrolment in courses, but may not withdraw from course challenge without substitution of regular course enrolment. After the tenth day of classes, no further course challenge changes will be permitted.

## Course Audit

A student who has satisfied the admission requirements of the University may attend a specific course(s) as an auditor upon completion of the necessary enrolment procedures, which include written approval of the department concerned.

**Note:** Course audit and special audit are for different categories of students. Those interested in gaining entry as special audit students should see "Special Audit Student" on page 26.

## Program/Course Changes and Withdrawal

### Program Changes

Any program changes require departmental approval on the program approval form which is available from the major department or on the Student Services website at <http://students.sfu.ca/forms>, and are processed by the department.

### Course Changes

You are urged to read the tuition refund policy and penalties for dropping courses very carefully to avoid, or minimize, financial penalty for dropping courses in which you enrol. Details of the policy, and deadlines, appear in the *Undergraduate Fees* section of the Calendar and, also in the *Undergraduate Schedule of Classes and Examinations* (<http://sis.sfu.ca>). *Failure to attend classes does not constitute withdrawal from a course.* Courses that are not formally dropped will be given a failing grade; payment for the course's tuition fee is required.

### Term Course Changes

The *Undergraduate Schedule of Classes and Examinations* (<http://sis.sfu.ca>), published in pdf format each term, contains detailed instruction procedures, and term specific deadline dates to be followed to change courses during the enrolment process and after the start of classes. Deadline dates may vary for the intersession and summer session.

### Summer Session and Intersession Course Changes

For course change information in the intersession and summer session, refer to the summer term *Undergraduate Schedule of Classes and Examinations* (<http://sis.sfu.ca>). Financial penalties apply to courses dropped during class days 6 to 10. There is no refund for courses dropped after day 10 of classes.

### Normal Course Change Period

#### Regular Term – Class Days 1-5

Courses may be added or dropped or tutorial times changed using the enrolment system without prior approval of the department offering the course. Courses that are dropped will not receive a notation on the student's academic record.

Changes to courses registered for course challenge or for course audit must be approved by the department offering the course. During this time period a student may change enrolment in course challenge from one course to another, or to regular enrolment in the course.

Enrolment for course audit, course challenge and course changes must be done in person at the department offering the course.

### Extended Course Change Period

#### Regular Term – Class Days 6-15

After the fifth day of classes to the 15th day, courses may be added only with special permission of the chair and instructor concerned. No courses can be added or changed to audit status after this time. Courses may be dropped without academic record notation. However, if a student drops all term courses, the withdrawal will be noted on the academic record. A student may not withdraw from course challenge without substitution of a regular course enrolment. During the first ten days of classes, he/she may change enrolment in course challenge from one course to another, or to regular enrolment in the course. Permission of the department is required.

Financial penalties apply to courses dropped during class days 6 to 10. There is no refund for courses dropped after day 10 of classes.

## Course Drop Period

### Regular Term – Class Days 16-25

No courses can be added or changed to audit status after the fifteenth day of classes.

After the 15th to the 25th day of classes, courses may be dropped by the student via the web at <http://sis.sfu.ca>. Courses dropped within this period will be automatically recorded with a WD notation on the student's academic record. There is no refund for courses dropped during this period. Students can apply to drop courses for extenuating circumstances at this time and if approved, the notation will be WE rather than WD.

During the sixth to twelfth class week a course(s) may be dropped only in extenuating circumstances. If approved, there will be a WE notation on the student's academic record for specific courses dropped. Apply to Student Services. Requests arising after the twelfth week, or requests relating to courses completed in a previous term, are referred to as 'retroactive' and follow the same procedures as above but may take longer to adjudicate.

**Note:** Extenuating circumstances are defined as unusual circumstances beyond the student's control which make it impossible for the student to complete the course. If a course drop is being considered after the 12th week of classes, it is recommended that students seek advice from Academic Advising and Student Success or their department advisor.

### Withdrawal from the University

Students wishing to withdraw from all courses in a term must follow the same schedule as outlined above in Term Course Changes. Specific term dates can be found in <http://sis.sfu.ca>.

For regular intersession and summer session terms, there is no refund for withdrawal from all courses in a term after day 10 of classes.

Official records will be updated to record the date on which term withdrawal was effected. The withdrawal date for students who withdraw after the fifth day of classes will be recorded on the academic record.

## Examinations

Final examinations will normally be held during the last two weeks of each term (Intersession and Summer Session exams are held in the last week of the session). Examination period dates are outlined in the *Academic Calendar of Events*, and in the *Undergraduate Schedule of Classes and Examinations* (<http://students.sfu.ca/enrollment/schedule.html>). Students must check the exam schedule when planning course selections. Students are reminded that final examinations may be scheduled at any time during the examination period and that students should avoid making travel or employment arrangements for this period. Students are not normally allowed to enrol in courses with conflicting examination times. Students who have a good reason to enrol in classes with conflicting exam times must seek permission from the departments who are offering those classes.

There are instances where students are faced with examination hardship, which is defined as

- three or more end-of-term examinations scheduled within a 24 hour period
- an examination at one location (e.g. the main Burnaby campus) followed immediately by an exam at another location (e.g. the Surrey campus).

For three or more exams, a student shall be given a new exam date (within the established exam period) for the second exam causing hardship by the respective instructor or department/faculty. For students with exams at more than one location, advance arrangements will be made by the instructor or department/faculty to write both exams at a single

location. Students must notify the instructor(s) and department one month prior to the exam date.

Each student is required to participate in assigned work during the term. The grades obtained for that work may be used to determine the final course standing. A passing grade in any exam does not ensure a passing grade for the course.

Students who miss exams because of illness or for compassionate reasons must communicate with their instructor (see DE grade).

A student may not rewrite a final paper or examination unless he/she re-enrols for the course and fulfils course requirements as outlined by the instructor.

In-class final examinations are not to be held before the beginning of the official examination period. Take-home examinations cannot be due until the commencement of the official examination period.

Instructors are required to submit grades within 96 hours after the exam via the on-line grade roster, to Records and Registration. (Please refer to exam procedures at <http://students.sfu.ca/academic/integrity/resources/examprocedures.html>.)

## Grades

The following three grading systems are used at Simon Fraser University.

### Standard Grade System

Letter grade	Definition	Numerical equivalent
A+	excellent performance	4.33
A		4.00
A-		3.67
B+	good performance	3.33
B		3.00
B-		2.67
C+	satisfactory performance	2.33
C		2.00
C-	marginal performance	1.67
D		1.00
F	fail (unsatisfactory performance)	0.00
FD	fail (academic discipline)	0.00
N	did not write final exam or otherwise complete course	0.00

### Competency Based Grades

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes.

Letter grade	Definition	Numerical equivalent
P	satisfactory performance or better (pass, ungraded)	no equivalent
F	fail (unsatisfactory performance)	0.00
FD	fail (academic discipline)	0.00

### Practicum Grades

This grading system is based on satisfactory acquisition of the practicum.

Letter grade	Definition	Numerical equivalent
P	satisfactory performance or better (pass, ungraded)	no equivalent
W	withdrawn	no equivalent

### Student Record and Transcript Notations

Notations are placed on a student's record to indicate a status or standing and provide additional

information to the student and the University. Notations do not impact a student's grade point average.

Letter grade	Definition	Numerical equivalent
AE	aegrotat standing, compassionate pass	no equivalent
AU	audit	no equivalent
CC	course challenge	no equivalent
CF	course challenge fail	no equivalent
CN	did not complete challenge	no equivalent
CR	credit without grade	no equivalent
FX	formal exchange	no equivalent
WD	withdrawal	no equivalent
WE	withdrawal under extenuating circumstances	no equivalent

### Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading system used in the course. Note that temporary grades revert to one of the standard, competency or notations as shown above.

Letter grade	Definition	Numerical equivalent
DE	deferred grade	no equivalent
GN	grade not reported	no equivalent
IP	in progress	no equivalent

### Explanation of Standard Grades

#### FD Grades

The letter grade FD (fail, academic discipline) is given by the chair of the department when a student has committed academic dishonesty (see Policy S10.01 Appendix 3). The grade will remain on a student's transcript until two years following graduation at which time it will convert to F.

#### N Grades

The letter grade N (incomplete) is given when a student has enrolled for a course, but did not write the final examination or otherwise failed to complete the course work, and did not withdraw before the deadline date. An N is considered an F for purposes of scholastic standing.

A student receiving a grade of N must re-enrol for the course and participate in the course again, completing course requirements approved by the instructor, to achieve a different evaluation.

### Explanation of Competency Based Grades

#### P Grades

The designation P (pass) will be given when a student successfully completes a course graded on a pass (P) or withdrawn (W) basis. This grade has no numerical equivalent and does not affect the term grade point average or the cumulative GPA.

#### W Grades

The designation W (withdrawn) will be given when a student is withdrawn after the course drop period for a course graded on a pass (P) or withdrawn (W) basis. The grade of W has no numerical equivalent and does not affect either the term grade point average or the cumulative grade point average.

### Explanation of Student Record and Transcript Notations

#### AE Grades

Aegrotat standing (AE) may be awarded in an incomplete course on medical or compassionate grounds by the registrar acting on the recommendation of the instructor or department chair.

Written evidence must substantiate such a request, given that the course requirements have been substantially fulfilled. This evidence normally must be received by the registrar or department within 96 hours of a scheduled final exam or within 96 hours of the last day of term lectures for which such standing is requested. Courses for which aegrotat standing is awarded are not included in the GPA calculation.

#### AU Notation

Audit is an AU notation that is recorded when a student has approval from the department not to complete the course for credit. The last day to audit a course is the end of week one of the term. Audited courses will not count toward degree requirements.

#### CC Grades

Course Challenge Completed is a grade for a student who has been enrolled for a course challenge, subject to an assessment equivalent to the course's final exam plus an interview which may include an oral and/or practical exam, all to be arranged and approved by the department chair. Departments may hold course challenge exams at any time after the term's start. A performance equivalent to a C grade or higher is required for a successful course challenge.

The department concerned must submit a report to the registrar on or before the last day for regular grades submission for that term indicating the final disposition for the course challenge in the term. There is no provision for extension or deferral. Results will be recorded by departments as successful, unsuccessful or unattempted. Successful results will appear on transcripts and statements of standing with the entry CC in the grade column and with units shown. The CC grade has no numerical equivalent and is not included in the grade point average. The grade of CC may not be applied in any way toward application for scholarships, bursaries or loans.

#### CF Grades

The Challenge Failed grade of CF is given for unsuccessful course challenge when a student performs unsatisfactorily and fails a course challenge. The grade has no numerical equivalent and is not included in the calculation of the grade point average.

#### CN Grades

The Challenge Not Completed grade of CN is given for unattempted course challenge when a student is enrolled for a course challenge but never attended the course and did not withdraw before the deadline date. The grade has no numerical equivalent and is not included in the calculation of grade point average.

#### CR Grades

The Credit Granted notation is to recognize course work completed at another institution that is also being granted credit towards a Simon Fraser University degree program. The CR grade, which has no numerical equivalent and is not included in the grade point average calculation, may only be assigned by the Office of the Registrar and is typically used for double degree programs.

#### FX Grades

The Formal Exchange/Double Degree grade of FX is assigned for formal exchange and double degree courses only. The grade has no numerical equivalent and is not included in the GPA calculation.

#### WD Notation

The Withdrawal notation of WD identifies a course freely dropped by the student. The notation WD is not a grade and does not affect the grade point average. Different time periods are in effect for intersession and summer session. For term specific dates, refer to the *Undergraduate Schedule of Classes and Examinations* located at <http://students.sfu.ca>.

#### WE Notations

The Withdrawal for Extenuating Circumstances notations of WE identifies a course drop approved for extenuating circumstances normally during week six

through to the end of week 12 of a term. The notation WE is not a grade and does not affect the grade point average. Extenuating circumstances are defined as unusual circumstances beyond the student's control which make it impossible for the student to complete the course. Different time periods are in effect for intersession and summer session. For term specific dates, refer to the *Undergraduate Schedule of Classes and Examinations* (<http://students.sfu.ca>).

### Explanation of Temporary Grades

#### DE Grades

A deferred grade is a temporary grade assigned at the end of the term for incomplete course work. A deferred grade will revert to a letter grade or notation. The DE notation can be issued in two circumstances.

- A student must request a DE within 24 hours after the final examination date or final course work is submitted on the basis of documented medical or compassionate grounds. Within four days the student must also submit a physician's certificate or other document substantiating the request for deferral. Failure to submit supporting documents may result in an F grade.
- The course instructor decides to defer submitting a final grade pending completion of further work by a student or students.

All unchanged DE notations will be converted automatically to F after the end of the first week in the following term. In exceptional cases, an extension may be granted by the instructor and must be approved by the department chair and submitted in writing to the Office of the Registrar with a final deferral date. Normally, the maximum extension allowed is the end of the term following the original deferral. DE is a temporary grade that will revert to a letter grade or notation.

#### GN Notation

The Grade Not Reported notation may be used if circumstances beyond the instructor's or University's control make it impossible for grades to be assigned for the entire class. The notation has no numerical equivalent and does not affect either the term grade point average or cumulative grade point average. The dean of the faculty responsible advises the registrar, in writing, that the notation GN is required for a course until grades can be submitted. GN is a temporary grade that will revert to a letter grade or notation.

#### IP Grades

An In Progress grade of IP is a temporary grade assigned for incomplete practicum courses in the Faculty of Education. The grade has no numerical equivalent and is not included in the grade point average. IP grades will convert to P or W.

### Credit for the Term

All credit earned for the term will be granted regardless of the term's grade point average (GPA). Credit may be granted for a specific course/topic once only. See "Repeated Simon Fraser University Courses" on page 27.

### Statement of Grades

At the end of each term, grades for that term are made available to students on the student information system. Students who are not in good academic standing will be notified. Grade changes will be processed as soon as possible. Information concerning grades is not released to unauthorized persons without written consent of the student.

### Grade Point Averages

The grade point average (GPA) is a method of expressing the student's performance as a numerical average. Each letter grade is assigned a numerical equivalent, which is then multiplied by the unit value

assigned to the course to produce the grade point. Grades without a numerical equivalent are not included in the calculation of the grade point average.

Term grade point average (GPA) is computed by dividing the total grade points earned by the total units completed in the term to the second decimal place.

	Letter Grade	Numeric Value	Units	Grade Point
course 1	A	4.00	3	12.00
course 2	A+	4.33	3	12.99
course 3	B-	2.67	3	8.01
course 4	C	2.00	3	6.00
course 5	F	0.00	4	0.00
Total			16	39.00
term grade point average: 39/16 = 2.44				

The cumulative grade point average (CGPA) expresses performance as a numerical average for all terms completed and is closed in the term in which a degree or diploma is awarded by senate. A new CGPA begins when a student returns for further studies following the awarding of a degree or diploma.

The CGPA is calculated by dividing the total grade points earned to date by the total units undertaken to date to the second decimal place. The CGPA calculated for terms completed prior to the fall term 1979 includes repeated courses.

The upper division grade point average (UDGPA) is calculated by dividing the total grade points earned in upper division courses by the total units assigned for those courses, counting only the higher grade in courses that have been repeated.

### Standing Required for Continuance

Every student is expected to maintain an acceptable scholarship standard — specifically, a minimum 2.00 CGPA. A student who does not do so is considered to be performing unsatisfactorily. The required standing for continuation will be calculated after an attempt of nine units at Simon Fraser University.

### Academic Alert

A student whose term grade point average (GPA) falls below 2.00, but who is not placed on any of the academic standings given below, should seek guidance at Academic Advising and Student Success.

### Academic Probation

A student who has attempted at least nine units and has a CGPA of less than 2.00 shall be placed on academic probation (OAP) and may not enrol in a course overload. A student on OAP may not receive a 'letter of permission' to attend another university or college. See "Reactivation and Readmission" on page 25. A student on academic probation shall be evaluated at the end of each term, and if

- the term GPA and the CGPA are each 2.00 or higher, the student shall be in good academic standing
- the term GPA is 2.00 or higher, but the CGPA is less than 2.00, the student shall continue on academic probation (CAP)
- the term GPA is less than 2.00, but the CGPA is 2.00 or higher, the student shall continue on academic probation (CAP). (This could occur if a student repeats a course.)
- both the term GPA and the CGPA are less than 2.00, the student shall be required to withdraw (RTW) from the University or, if previously required to withdraw (RTW), shall be placed on extended withdrawal (PW)

## Required to Withdraw

A student may be required to withdraw (RTW) after one or more terms on academic probation (see 'outcomes for a student on academic probation' below). A student on RTW may not receive a letter of permission to attend another university or college.

## Extended Withdrawal

A student may be placed on extended withdrawal (PW) after she/he is required to withdraw (RTW), is readmitted and subsequently is on academic probation for one or more terms (see *Outcomes for a Student on Academic Probation* below). A student on extended withdrawal (PW) may not receive a letter of permission to attend another university or college.

## Outcomes for a Student on Academic Probation

A student on academic probation shall be evaluated at the end of each term. If, at the end of the term,

- the SGPA and the CGPA are each 2.00 or higher, the student shall be in good academic standing
- the SGPA is 2.00 or higher, but the CGPA is less than 2.00, the student shall continue on academic probation
- the SGPA is less than 2.00, but the CGPA is 2.00 or higher, the student continues on academic probation (this could occur if a student repeats a course).
- both the SGPA and the CGPA are less than 2.00, the student shall be required to withdraw (RTW) from the University or, if previously required to withdraw (RTW), shall be placed on extended withdrawal (PW)

## Options for Required to Withdraw Students

Students whose status is Required to Withdraw (RTW) may choose one of the following options.

- apply for entry to the Student Success Program and an extension to the academic probation period (refer to 'Extended Academic Probation for First Time RTW Students' section below)
- apply for readmission based on subsequent completion of transferable courses from another institution (refer to 'Readmission after Required to Withdraw' section below)

**Note:** students who choose to attend another institution subsequent to being Required to Withdraw for purposes of applying for readmission are not eligible for entry to the Student Success Program.

## Extended Academic Probation for First Time RTW Students

A student who is required to withdraw for the first time may be eligible to enter the Student Success Program, a two term program focusing on academic and learning skill development with concurrent credit

course enrolment. Students cannot exceed nine units (unless advance special permission is received), and may not receive a letter of permission to attend another post-secondary institution while in the program. Entry requirements, set out by the program, are available through the Student Success Program office. Acceptance and participation provides an extended academic probation period. A student can only attend the program once in their academic career; normally withdrawal and/or unsuccessful program completion constitutes one attempt.

## Evaluation and Continuance Requirements during Extended Academic Probation

To participate and continue, students must fulfil all required components in each of the two terms. Progress evaluation occurs throughout the program and at the end of each term. Students deemed not to be meeting the requirements at any time (academic and/or non-academic) will be withdrawn from the program, dropped from enrolled courses, and will be 'Required to Withdraw' from the University.

## Outcomes for a Student on Extended Academic Probation

### End of Term One

- the semester grade point average (SGPA) and the cumulative grade point average (CGPA) are each 2.00 or higher, the student shall be in good academic standing
- the SGPA is 2.00 or higher, but the CGPA is less than 2.00, the student shall continue on academic probation
- the SGPA is less than 2.00, but the CGPA is 2.00 or higher, the student continues on academic probation (this could occur if a student repeats a course).
- both the SGPA and the CGPA are less than 2.00, the student shall be required to withdraw (RTW) from the university unless the student has satisfactory participation in the program

### End of Term Two

Evaluation of academic standing reverts to the academic standing and continuance policy that applies to students who are not on extended academic probation.

## Grade Point Averages Needed for Graduation

Grade point averages (GPAs) used for graduation are the minimum GPAs that must be achieved to satisfy the requirements for a degree or other credential. The graduation GPA must be obtained both on the overall course work (CGPA) as well as on the upper division subset of that work (UDGPA).

In addition, program GPAs are the required minimum to satisfy the requirements of an honors, major, extended minor or minor program. In each case, the

program GPA must be obtained both on the overall course work (CGPA) as well as on the upper division subset of that work (UDGPA) in the program area.

The graduation and program GPAs specified below are University minimum requirements; individual faculties and departments may, with senate approval, have higher requirements.

In the event of repeated courses, only the higher grade is used in these GPA calculations.

Overall minimum requirements for all courses (CGPA) and all upper division courses (UDGPA) completed at Simon Fraser University	
joint honors degree*	3.00
honors degree*	3.00
general degrees	2.00
certificates	2.00
post baccalaureate diplomas	2.50
Program GPAs	
Program plan minimum requirements for all courses and for all upper division courses completed in the program area	
joint honors*	3.00
honors*	3.00
joint majors	2.00
major	2.00
extended minors	2.00
minors	2.00
*students who have obtained a GPA of 3.5 or greater in both the graduation and program categories specified above will receive the designation of joint honors or honors (first class).	

## Convocation

Convocation is held in June and October. Students who fulfil degree requirements during the fall or spring terms may attend the June ceremony. Graduates of the summer term attend the October ceremony.

### Application for Graduation/Granting of Degree, Certificate or Diploma

Each candidate for a degree, certificate, or diploma must formally apply for graduation.

For information about how to apply to graduate and for specific deadlines or ceremony dates, please visit <http://www.sfu.ca/convocation>.

### Notification of Award by Senate

Following senate approval, each student who has been awarded a degree, certificate or diploma will receive a letter of confirmation from the registrar.

# General Regulations

## Student Responsibility

A student is expected to fulfil the requirements and write the examinations in all courses for which he/she is enrolled after the date shown in the *Undergraduate Schedule of Classes and Examinations* (<http://students.sfu.ca/deadlines>) as the last date to drop courses. It is the student's responsibility to ensure that Student Services has the proper information regarding courses in which the student is enrolled. Except in cases of illness, or for compassionate reasons, failure to write the exam constitutes a course failure. A student may receive credit for only the courses in which he/she is officially enrolled according to Student Service's records.

## Academic Honesty and Student Conduct

### Academic Honesty

All members of the University community share responsibility for academic standards and the reputation of the University. Academic honesty is a cornerstone of the development and acquisition of knowledge. Academic honesty is a condition of continued membership in the University community.

Academic dishonesty, like other forms of dishonesty, is misrepresentation with intent to deceive or without regard to the source or the accuracy of statements or findings. Academic dishonesty, in whatever form, is ultimately destructive of the University's values. Further, it is unfair and discouraging to the majority of students who pursue their studies honestly. Scholarly integrity is required of all members of the University.

The following examples are representative but not exhaustive of activities constituting academic dishonesty: plagiarism (presenting the work of another person as your own); submitting the same work more than once without prior approval; cheating; impersonation (having someone else write your exam); submitting false records or information (forged medical notes); stealing or destroying the work of another student; removing, mutilating, misplacing or destroying books or other library material; unauthorized or inappropriate use of computers, calculators and other forms of technology in course work, assignments or examinations.

The code of academic honesty is contained in policy S10.02 on the Web via [www.sfu.ca/policies/students](http://www.sfu.ca/policies/students).

### Penalties for Acts of Academic Dishonesty

Penalties imposed by the University for academic dishonesty may include but are not limited to one or more of the following: a warning, a verbal or written reprimand, reassessment of work, failure on a particular assignment, failure in a course, denial of admission or readmission to the University, de-registration, forfeiture of University awards or financial assistance, suspension or permanent suspension from the University or degree revocation.

### Student Conduct

Simon Fraser University is committed to creating a scholarly community characterized by civility, diversity, free inquiry, mutual respect and individual safety. The code of student conduct defines students' basic responsibilities as academic community members, to define inappropriate student conduct and to provide procedures and penalties to be invoked if they engage in such unacceptable behavior. Each student is responsible for his/her conduct which affects the University community. The

code shall not be construed to unreasonably prohibit peaceful assemblies, demonstrations or free speech.

The following are representative but not exhaustive of behaviors constituting misconduct: harm, injure or threaten any person (in person or through electronic means); disruptive or dangerous behavior; behavior which results in damage, destruction and theft of University property or the property of any University member; forgery or alteration of University documents or records; misuse of University resources including information (computing) resources; unauthorized entry or presence in University premises; misuse of student disciplinary procedures. The code of student conduct policy S10.01 is available in the Library, any department, or at [www.sfu.ca/policies/students](http://www.sfu.ca/policies/students).

### Penalties for Acts of Student Misconduct

Penalties/remedies imposed by the University for misconduct may include but are not limited to one or more of the following: a warning, a verbal or written reprimand, exclusion from specified areas of the University, restitution or other ameliorative measures, counselling, denial of admission or readmission to the University, de-registration, forfeiture of University awards or financial assistance, suspension or permanent suspension from the University.

### Procedures for Academic Dishonesty and Student Misconduct

Procedures to be followed by the University in imposing a penalty for acts of academic dishonesty or acts of misconduct or an appeal therefrom are detailed in the policy establishing the university board on student discipline and the senate committee on disciplinary appeals (policy S10.02). This policy is available in the Library or any department office, or on the website [www.sfu.ca/policies/students](http://www.sfu.ca/policies/students).

## Student Appeals

See "1.16 Graduate Student Appeals" on page 226 for graduate student appeals. Students may appeal certain University decisions as follows.

### Reconsideration of Grades

Failing grades have been checked very carefully and appeals seldom result in higher grades except where a clerical error has occurred. See academic policy T20.01 at [www.sfu.ca/policies/teaching](http://www.sfu.ca/policies/teaching).

### Admission and Readmission

Appeals for admission and readmission may be considered by the committee to review university admissions. Student Services provides appeal forms and advice about submitting an appeal. Download a pdf of the appeal form at <http://students.sfu.ca/forms>.

### Course Withdrawal

During the sixth to twelfth class week, a course(s) may be dropped only in extenuating circumstances. If approved, a WE notation appears on the academic record for specific courses dropped. Apply to the Academic Appeals Manager, Student Academic Appeals, Enrolment Services. Requests arising after the twelfth week, or requests relating to courses completed in a previous term, are 'retroactive' and follow the same procedures but may take longer to adjudicate. Student Services provides appeal forms and advice on submitting an appeal. Download an appeal form at <http://students.sfu.ca/forms>.

Extenuating circumstances are defined as unusual circumstances beyond the student's control which make it impossible to complete the course. If a course

drop is being considered after the twelfth week of classes, students should seek advice from Academic Advising or their department advisor.

### Term Withdrawals

Students wishing to withdraw from all courses in a term will follow the same schedule as outlined above. See <http://students.sfu.ca/forms> for appeal forms and <http://students.sfu.ca/deadlines> for term dates.

### Tuition Fee Appeals for Refund

The enrolment appeals committee hears appeals for tuition fee refunds, penalties for classes dropped, and for late payment due to extenuating circumstances beyond the student's control. The appeal must be supported with proper documents, i.e. medical and/or (in cases that involve a family death) a death certificate. Financial hardship alone does not qualify.

The student must appeal within one calendar year from the time the class(es) is dropped and charges incurred. If the student is uncertain about health, finances, time or other resources, students are advised to be conservative in committing themselves to classes. Student Services provides appeal forms and advice about submitting an appeal. The appeal form is available at <http://students.sfu.ca/forms>.

### Appeals of Academic Penalties

Disputes about the findings may be brought to the university board on student discipline (policy T10.03). Appeals on the following three grounds may be brought to the senate committee on disciplinary appeals (also Policy S10.04).

- that there was unfairness in the process at the hearing
- that the penalty imposed was inappropriate
- that new evidence has emerged that was not available at the hearing and which casts doubt on the accuracy of the finding

### Entry to Limited Enrolment Program or Faculty

Appeals may be considered by the appropriate chair, director or dean.

### Senate Appeals Board

The senate appeals board considers cases in which a student or former student feels aggrieved by the decision of a faculty, department or other administrative unit relating to an enrolment in courses, University withdrawal, graduation eligibility, program approval, or a matter relating to academic standing when special circumstances are present. Appeals must be submitted in writing, giving the grounds for the appeal. Student Services provides appeal forms and advice on submitting an appeal. Obtain the appeal form at <http://students.sfu.ca/forms>.

## Class Interruption

Simon Fraser University makes reasonable efforts to ensure that classes and courses proceed on a regular basis and without interruption. Faculty have certain discretion to cancel or change the timetable for their classes; they will endeavor to give reasonable notice of any cancellation or change. The University will not be responsible for cancellation or change of any class. Neither will Simon Fraser University be responsible for the interruption or termination of any class or course of instruction which results from fire, riot, labor disruption or any other event which occurs despite the University's efforts, or for failure to give notice of the interruption or termination.



# Undergraduate Fees

## Tuition Fee Schedule

Simon Fraser University assesses undergraduate tuition fees in accordance with a schedule of fees based primarily on the number of units in which the student enrolls. Various special fees may be assessed by the University in certain circumstances or for specific purposes. All fees are subject to change, subject to provincial legislation and board of governors approval.

	Basic Tuition Fee <sup>1</sup>	Differential Tuition Fee for International Students <sup>3</sup>
normal credit (per unit)	\$157.30	\$490.70
BUS courses at 200 division and above (per unit)	\$209.80	\$543.20
CMPT courses at 200 division and above (per unit)	\$165.20	\$498.60
ENSC courses at 200 division and above (per unit)	\$173.10	\$506.50
course challenge (per unit)	\$157.30	\$490.70
audit (per unit)	\$78.65	\$245.35
Co-operative Education practicum (per term)	\$665.40	\$665.40

Subject to the notes below, and to the graduate fee schedule:

1. The basic tuition fee schedule applies to an undergraduate student who enrolls for an undergraduate or graduate course, or courses, who establishes or has established to the satisfaction of the University that, at the time of commencement of the term, he or she is either a citizen of Canada or has the status of a permanent resident of Canada.
2. The differential tuition for international students schedule applies to each undergraduate student who enrolls to undertake an undergraduate or graduate course, or courses, who does not establish or has not established to the satisfaction of the University that, at the time of commencement of the term, he or she is either a citizen of Canada or has the status of a permanent resident of Canada.
3. The University reserves the right at any reasonable time to require any individual student to establish proof of status claimed.
4. For the purposes of assessing fees, an undergraduate student is any student enrolled as a student at the University except (a) a student who has been admitted by the senate graduate studies committee to undertake work towards a master's degree, PhD degree or other graduate program at Simon Fraser University and who enrolls for such work, or (b) a student who has been admitted by the senate graduate studies committee to undertake work as a qualifying, special or exchange student at Simon Fraser University and who enrolls for such work. Those in (a) and (b) are assessed fees under the graduate tuition fee schedule but if they have approval to undertake some undergraduate course work supplementary to the program, they will be assessed tuition fees according to the basic tuition fee schedule for such work.
5. Fees are not transferable from one term to another.
6. For students enrolled in any combination of eight week or 16 week courses, tuition fees will be assessed per unit as shown in the tuition fee schedule.

## Student Services and Recreation-Athletics Fees

The Student Services Fee (SSF) and Recreation-Athletics Fee (RAF) are assessed to all students enrolled for credit courses that are offered at the Burnaby, Simon Fraser University Vancouver and Simon Fraser University Surrey campuses according to the table below. Those enrolled in audit courses, on leave, designated 'off-campus' courses, or distance education courses only do not pay these fees.

	SSF	RAF	Total
three or fewer units	\$38.62	\$32.18	\$70.80
Intercession only	\$38.62	\$32.18	\$70.80
summer session only	\$38.62	\$32.18	\$70.80
four or more units	\$38.62	\$64.36	\$102.98
any combination of intercession, summer session, summer term	\$38.62	\$64.36	\$102.98
any combination of co-operative education work term and credit course	\$38.62	\$32.18	\$70.80

## Student Activity Fee

A student activity fee, determined by the Simon Fraser Student Society, is collected from all students enrolled in credit courses with the exception of students completing courses for audit purposes only. For a breakdown of this fee see "Simon Fraser Student Society" on page 457.

Student Activity Fee – payable by all students	\$62.14
*designated 'off-campus' courses only	\$31.09
*3 or fewer course units	\$31.09
*summer session courses only	\$31.09
*Intercession courses only	\$31.09
co-operative education only	\$31.09
any combination of intercession, summer session, summer term, and co-operative education term	\$62.14
*persons aged 60 or more and who are Canadian citizens or have permanent resident status in Canada are exempt from this fee	

## Special Fees

<b>Admission Deposit for New Students</b> See "Payment of the Admission Deposit for New Students" on page 35.	\$250.00
<b>Application Fee</b> <i>Level 1</i> Each time an applicant applies for admission or readmission, a \$45 application fee is required. This fee, non-refundable and not applicable to tuition fees, must accompany the application for admission or be paid soon after making an application.	\$45.00
<i>Level 2</i> A \$100 application fee is required for all applicants whose academic records, in whole or in part, originate outside of BC. (A level 1 fee is assessed if the documents originate from a Canadian high school, or if the applicant is participating in a recognized exchange program between Simon Fraser University and another institution.) This fee is non-refundable and not applicable to tuition fees.	\$100.00
<b>Library/Identification Card Replacement</b>	\$16.19
<b>U-Pass Card Replacement</b>	\$20.00
<b>Replacement for an Original Degree, Diploma or Certificate Parchment</b>	\$21.50
<b>Residence Application</b>	\$25.00
<b>Graduation</b> granting of a degree award of certificate or diploma late application to graduate (non-refundable) regalia rental fee	\$35.00 \$20.00 \$20.00 \$25.00
<b>International Program</b> For students who have been selected and have accepted the offer to participate in an international program, the following fees are applicable: formal exchange programs participation international field school administration computing science dual degree	\$150.00 \$150.00 \$700.00
<b>Back on Track Student Success Program</b> Depending on academic standing at the time of entry or continuance in the program, the fees will be as follows. BOT 100, 130 BOT 110 BOT 120, 140	\$250.00 \$350.00 \$450.00

## Universal Transit Pass

The U-Pass fee is \$104.36 per term. The following are not eligible for U-Pass and will be exempt from this fee.

- students who are not assessed Simon Fraser Student Society or Graduate Student Society fees (see "Student Activity Fee" on page 33)
- students who are enrolled in Distance Education courses only
- students who are enrolled in designated 'off-campus' courses only
- students who are on leave
- students who do not live in the GVRD and are enrolled in designated 'on-campus' courses which are scheduled to meet a total of *one day or less per week* on average throughout the term

The following will be exempted from the U-Pass fee by following the procedures for U-Pass exemption at the

U-Pass website ([www.sfu.ca/upass](http://www.sfu.ca/upass)). Please note that supporting documentation will be required.

- students who do not reside in the Greater Vancouver Regional District (GVRD) and who attend classes at a Simon Fraser University campus on average one day per week or less during the term
- students who are enrolled with TransLink as handyDART users or hold a valid non-transferable TransLink transit pass
- students who hold a valid TransLink U-Pass issued from another post-secondary educational institution
- students who have a documented physical or psychological condition which prevents public transit use

The U-Pass fee is charged to all students at the time of enrolment in courses. For exempt students, the U-Pass fee reversal will be applied to accounts by the first week of classes. The U-Pass fee is non-refundable after the end of the second week of the term.

## Mandatory Supplementary Course Fees

In addition to credit course fees, mandatory supplementary course fees may be assessed for individual courses in addition to basic tuition and are deemed necessary for successful completion of the course. Mandatory supplementary course fees cover additional costs associated with, for example, such items as field trip expenses or special costs/handling involved in distance education courses.

A schedule of these fees appears below, and is also published in the *Undergraduate Schedule of Classes and Examinations* as well as in departmental course outlines. The fees are approved by the vice-president finance and administration, following the recommendation of the advisory committee on mandatory supplementary course fees. Questions regarding these fees may be directed to the department initiating the fee, Student Services, or the vice-president finance and administration.

Mandatory supplementary course fees are not charged for regular credit instruction services which may include

- evaluation of work or performance, such as marking of papers and exams
- laboratory use, including materials and supplies that are consumed during laboratory use. (Departments may charge a refundable deposit for materials used by the student and returned to the University in reasonable condition at the end of the course.)
- basic library facilities including one library card and access to collections
- basic microcomputer laboratory use
- materials or services required as a result of the method of instruction such as audio visual equipment, course outlines, study rooms and films and video tapes that are integral to the instruction and do not become property of the student.

Photocopied materials, computer disks and audio visual tapes may replace or enhance a required text as a means of instruction and are therefore not mandatory supplementary course fees. Many prepared packages will be distributed through the SFU Bookstore. It may be necessary to distribute some materials within departments. Disclosure of these fees will be made in each course outline.

### Archaeology

ARCH 435..... \$500

### Biological Sciences

BISC 306..... up to \$153  
BISC 310..... up to \$120  
BISC 316..... up to \$12  
BISC 326..... up to \$153

BISC 404..... \$60  
BISC 406..... up to \$45  
BISC 416..... up to \$153

### Contemporary Arts

FPA 130, 131..... \$75  
FPA 160, 161, 163..... \$50  
FPA 170..... \$35  
FPA 230, 231..... \$100  
FPA 233..... \$50  
FPA 252..... \$20  
FPA 260, 261, 262, 263, 264, 265, 268, 269..... \$50  
FPA 290..... \$75  
FPA 333, 360, 361, 362, 363, 364, 365, 368, 369..... \$50  
FPA 374..... \$25  
FPA 375..... \$35  
FPA 390..... \$75  
FPA 393, 460, 461..... \$50

### Distance Education

All courses offered through the Centre for Online and Distance Education are assessed a \$40 per term fee to cover the cost of printing and binding materials, packaging and mailing of course materials and assignments, and broadcast and distribution rights for video support.

### Earth Sciences

EASC 100..... \$50  
EASC 101..... \$20  
EASC 102..... \$10  
EASC 204..... \$30  
EASC 206..... up to \$200  
EASC 301, 303..... up to \$100  
EASC 304..... up to \$30  
EASC 305..... \$80  
EASC 306..... up to \$400  
EASC 309, 313..... up to \$30  
EASC 401..... \$30  
EASC 402..... up to \$150  
EASC 403..... \$50  
EASC 404..... up to \$100  
EASC 406..... up to \$3,000  
EASC 408..... up to \$250  
EASC 409, 410..... \$30  
EASC 411..... \$100  
EASC 413..... up to \$30  
EASC 416..... up to \$50  
EASC 418, 419..... up to \$30  
EASC 421..... up to \$300

### Education

EDUC 330..... \$20  
EDUC 401/402, 405..... \$25  
EDUC 416, 430..... \$20  
EDUC 452..... \$46  
EDUC 476, 477..... \$20

### Education Professional

EDPR all 300 division courses..... \$20  
EDPR all 400 division courses..... \$20

### Environmental Science

EVSC 491..... \$200

### Geography

GEOG 213..... \$60  
GEOG 253..... \$15  
GEOG 264..... up to \$10  
GEOG 310..... up to \$400  
GEOG 313..... \$50  
GEOG 323..... \$15  
GEOG 324..... \$20  
GEOG 353..... \$35  
GEOG 385..... \$15  
GEOG 412..... \$100  
GEOG 416..... \$35  
GEOG 417..... \$15  
GEOG 426..... \$60  
GEOG 427, 428..... up to \$50  
GEOG 441..... up to \$10  
GEOG 453..... \$50  
GEOG 497..... \$2,500 – \$3,000

### History

HIST 376..... \$12

### Interactive Arts and Technology

IAT 208..... \$60

### Marine Science

All MASC courses offered at the Western Canadian Universities Marine Biological Station (Bamfield) carry a supplementary course fee of up to \$200 per course.

### Sociology and Anthropology

SA 364..... \$40  
SA 371..... \$100

## Viewing the Student's Account

When a change is made to any part of the student's enrolment, the student account balance will be affected. This new balance will be calculated overnight by the University's computer system and will be available the next day. Students should check the new account balance before paying fees. Obtain account balance information at <http://sis.sfu.ca>.

## Payment of Fees

Regardless of the payment method, always provide a student number with all financial transactions. The Simon Fraser University student number is the only account reference that the University uses so it is very important to include this information.

There are several methods to pay fees.

### Internet/Telephone Banking

- set up Simon Fraser University as a Bill Payee from the student's bank account
- use the Simon Fraser University Student Number as the account / invoice/billing number (note: some banking institutions look for a ten digit number for the student/billing number. In this case, add a zero to the beginning of the student number.)
- go to "make a payment"
- enter amount of payment
- record "confirmation number" for the student's records
- allow two to three business days for the payment to be posted on to the student's Simon Fraser University Student Account

### In-person on campus

Students can drop off a cheque or money order in the mailbox at Simon Fraser University's main campus in the mailbox at Simon Fraser University's main campus in MBC 3000. Make the cheque payable to Simon Fraser University, with the Simon Fraser University student number clearly printed on the front.

Student can also pay by cheque, money order or debit card at the general enquiries counter on any of the three campuses. (Credit cards are not accepted for tuition fee payments.)

- Simon Fraser University's main campus at the Student Services general enquiries counter, located in MBC 3000. Monday – Thursday 9 am – 6 pm, and Friday 10 am – 4:30 pm
- Simon Fraser University Surrey, room 250, 13450 102 Avenue, Surrey, Monday – Friday 9 am – 4:30 pm, phone 778.782.7400.
- Simon Fraser University Vancouver, 515 West Hastings Street, Vancouver. 778.782.5000 Tel. Monday – Thursday 10 am – 7 pm, and Friday 10 am – 5 pm.

### By Mail

Mail a cheque or money order (do NOT send cash) to Student Accounts, Student Services, MBC 3000, Simon Fraser University, 8888 University Drive, Burnaby, BC V5A 1S6.

Please allow five working days for a payment to be posted. There is a \$25 administrative handling fee for all returned cheques.

## Payment of the Admission Deposit for New Students

New students must pay a non-refundable admission deposit to confirm acceptance of the offer of admission to undergraduate studies given by the University.

The deposit will be applied to the cost of tuition. The deposit is not an additional charge to the tuition fee assessment.

New students may pay the \$250 admission deposit by credit card through goSFU (<http://sis.sfu.ca>) under "Finances." This is the only regular fee payable by credit card.

## Outstanding Accounts

Students are required to pay any outstanding balance in their account to be eligible to enrol in classes. In order to ensure sufficient time for payments to clear, students should pay the balance of these account five working days prior to attempting to enrol in classes.

## Payment of Assessed Fees

The deadline for payment of fees is published in the *Undergraduate Schedule of Classes and Examinations* distributed each term. Credit for scholarships and bursaries will be given only on the authority of the Financial Aid and Awards office. Visit <http://students.sfu.ca/deadlines> for more information.

Students eligible for any awards or sponsorships will receive a refund from Student Services when the appropriate units are received and processed.

Students who are eligible for tuition fee waivers or holders of Faculty of Education tuition fee certificates (school associate certificates) must submit to Student Services the properly completed forms and payment for the total amount of the student activity fee, athletic fee, UPass (if applicable), and student services fee each term no later than the tuition and fee payment deadline.

## Cancellation of Enrolment

To cancel your entire enrolment, you must use the student information system to drop each of your courses.

To avoid financial penalties, you must drop all courses by the deadlines given in the *Undergraduate Schedule of Classes and Examinations* publication.

Non-payment of outstanding fees or non-attendance does not constitute cancellation of enrolment and grades based on incomplete or no work completed will be assigned. Visit <http://students.sfu.ca/deadlines> for more information.

## Refunds

When students who are enrolled in credit courses reduce the number of courses in which they enrolled, a refund may be granted provided the course change is made during the prescribed refund period. Special fees are not refundable, with the exception of the graduation fee and award of certificate or diploma fee.

## Tuition Refund Policy and Course Drop Penalties

### Regular Term and Intercession (May-June)

Space in Simon Fraser University courses is limited. Tuition refunds and penalties as outlined below are designed to discourage a student from holding space in courses(s) which the student eventually decides not to take.

The enrolment system monitors course drops by taking 'snapshots' of the number of courses (net course load) in which each student is enrolled. Penalties are assessed on decreases in net course load, not on units. The exact dates of 'snapshots' are published each term in the *Undergraduate Schedule of Classes and Examinations* under the heading *Deadlines*. However, the general dates of the three 'snapshots' taken are: first, approximately one week after all students have been given access to the enrolment system; second, end of week one of classes; and third, end of week two of classes.

The first and last 'snapshots' are compared and, if a student's course load has decreased, the student will be assessed a penalty for each course drop that resulted in a decreased course load. The penalty is \$50 is the course was dropped before the end of week two. After week two there is no refund of tuition fees for courses dropped.

### Summer Session (July-August)

Tuition penalties are not applied for dropping summer session courses.

## Overdue Accounts and Dishonored Payments

Students with overdue accounts will be considered to be in bad financial standing and will be precluded from enrolling in subsequent terms. In addition, the University will withhold certain services, including but not limited to the release of various letters and documents such as official transcripts of academic record and parchments for degrees, diplomas and certificates. An account that is delinquent without approved resolution will be forwarded to a collection agency for appropriate action.

A student who presents payment in the form of a cheque that is subsequently returned by the student's Letters of Permission financial institution for lack of sufficient funds or because a stop payment has been

placed on that cheque will be assessed a penalty fee of \$25. In the event that a student on more than one occasion submits a cheque that is dishonored for any reason, the University reserves the right to require all future financial transactions with the University to be by cash, certified cheque or money order. The University may cancel a student's enrolment in a term when payments made by the student are subsequently dishonored by the student's financial institution. Late payment fees will apply.

Students with overdue accounts will be assessed a late fee penalty on outstanding fees. 2% will be assessed each month on the outstanding balance, regardless of any pending scholarships, bursaries, awards, tuition waivers and school associate certificates. Total penalties will be adjusted to conform to Canadian laws and regulations when the final payment is made.

## Refunds Due to Overpayments

To obtain a refund due to an overpayment, students must submit a refund request. Visit <http://students.sfu.ca/fees> to obtain the refund request form. The website shows the refund cheque request deadline.

## Graduation Fee and Award of Certificate or Diploma Fee

If the candidate's application for a degree, certificate and/or diploma is not approved, a full refund is issued. Applications may not be transferred from one term to another and the required fee must accompany each application. Late fees assessed when applying after the first deadline are not refundable.

## Tuition Fee Appeals

Any student who considers he/she has just cause to appeal the application of University policy as it pertains to the assessment and refund of undergraduate tuition fees may submit an appeal in writing to the enrolment appeals committee. See "Tuition Fee Appeals for Refund" on page 32.

## Tuition Fee Certificates (T2202A)

All Simon Fraser University students, who have an active University computing ID, can print T2202A tax forms, starting from the 2003 tax year, via the web at <http://go.sfu.ca>. Financial records are retained for a period of seven years and then are destroyed. For the 2002 tax year, a \$10 fee is charged to reproduce the T2202A form.

For more information about how to print T2202A forms, visit <http://students.sfu.ca/fees/taxinfo.html>.

# Financial Aid and Awards

## Financial Aid and Awards

3200 Maggie Benston Student Services Centre,  
778.782.8600 Registrar Information Service (Touch  
Tone service only), 778.782.4356 general enquiries,  
778.782.4722 Fax, <http://students.sfu.ca/financialaid>

## Introduction

Students are eligible for a variety of financial assistance programs including entrance or continuing scholarships, bursaries, awards, and government student loans and grants. **Scholarships** recognize outstanding academic achievements; **bursaries** are awarded on the basis of a demonstrated financial need; **awards** generally acknowledge outstanding achievements or contributions to the community. **Government student loans and grants** are awarded on the basis of a demonstrated financial need by the student's province of residence. Normally, grants are funding that students do not have to repay.

These programs are administered by one of three agencies: Simon Fraser University (*University administered*), an external organization (*externally administered*), or a government (*government administered*).

### Eligibility

Students entering Simon Fraser University from secondary or high school, or transferring from a regional college or university, may be eligible for

- Simon Fraser University Entrance scholarships
- bursaries
- awards for the University community
- federal and provincial/territorial government student assistance (i.e. student loans and grants)

Students currently studying at Simon Fraser University may apply for

- scholarships for continuing students
- bursaries
- awards for the University community
- federal and provincial/territorial government student assistance (i.e. student loans and grants)

### Deadlines

#### University Administered Programs

Visit <http://students.sfu.ca/deadlines> for the most up-to-date information about deadlines for scholarships, awards, and bursaries.

#### Externally Administered Programs

See the specific award for deadlines.

#### Government Administered Programs

**The latest students can apply for full-time student loans** is six weeks before the study program ends as long as the student has provided all the required documentation. The latest a student can apply for **part-time student loans** is eight weeks before the study period ends.

#### Federal Loans for U.S. Students

For information about application deadlines, please visit <http://www.fafsa.gov>

### Special Information for Intercollegiate Athletes

Since Simon Fraser University competes in both the NAIA and the CIS, eligibility requirements for scholarships, awards and bursaries may differ for individual sports.

## General Information and Regulations

The following regulations apply generally to all financial assistance administered by the University.

- All scholarships, awards, and bursaries are given on the recommendation of the senate undergraduate awards adjudication committee. Committee decisions, when announced, are final.
- The University does not guarantee the payment of any scholarships, awards or bursaries other than those provided directly from University funds. If invested funds do not provide the necessary income for an endowed scholarship, award or bursary, payment may be reduced or withheld. The University reserves the right to withhold awards donated by individuals or organizations where the funds required have not actually been received.
- The University reserves the right to refrain from making an award if, in its opinion, none of the applicants meet the specified terms.
- Students must successfully complete the term for which they have received the award, or the award will be revoked.
- The individual student is responsible for knowing the deadlines, proper completion of the application forms and supplying all appropriate documentation for the various scholarships, awards and bursaries. Incomplete applications may be rejected.
- The senate policy committee on scholarships, awards and bursaries ensures that all scholarships, awards and bursaries administered by the University or listed in its Calendar, are in the best interests of the University as an academic institution. The terms of reference for scholarships, awards and bursaries should not include restrictive criteria unrelated to academic merit or financial

need such as race, creed, colour, sex, or national origin, when the committee determines these criteria are improper or irrelevant.

- The senate undergraduate awards adjudication committee has the right to give special consideration to course load requirements on scholarships, awards or bursaries for persons with disabilities who are unable to meet the course load requirements due to their disability. Supporting documentation may be required.
- Students who misrepresent themselves on application forms for scholarships, awards or bursaries will be subject to disciplinary action.
- Regulations which apply to a specific financial assistance category are within that subsection.

## University Administered Programs

### University Entrance Scholarships and Awards

Student Recruitment, Student Services, Maggie Benston Centre, Tel 778.782.4970 general enquiries, Fax 778.782.5399, <http://students.sfu.ca>

The University offers entrance scholarships and awards to outstanding students from across Canada. Our entrance scholarship program recognizes exceptional academic and community achievements of students entering directly from high school and BC colleges or equivalent.

The scholarships and awards described below reflect our current program. For complete descriptions and selection criteria applicable to students entering in the fall of 2010, please refer to the entrance scholarship

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brochure and application material, available in fall 2009 at <http://students.sfu.ca/admission/entrancescholarships>

All scholarship applicants should have high academic standing — a minimum 90% grade average is normally required. Please read carefully the application requirements described on the above website, as not all scholarships require application. Applicants must be Canadian citizens or Permanent Residents to qualify for the majority of major entrance scholarships, except for international awards. All scholars must meet certain academic and enrolment requirements for complete disbursement of funds. Scholarship continuance regulations can be found at <http://students.sfu.ca/ps/entschols/regs.html>

### Additional Scholarships and Awards

Students may only hold one entrance scholarship from the University. Upon redeeming all of the scholarship installments, students will be considered for scholarships available to continuing students. See "Scholarships for Continuing Students" on page 38.

### Travel Allowance

An additional travel allowance is available for some scholarships or awards.

- Scholarship or award winners who live outside BC will receive a one-time travel allowance of \$1000.
- Scholarship or award winners who live within BC but outside the Lower Mainland will receive a one-time travel allowance of \$500.

### For Canadian High School Students – Application Required

The entrance scholarship application deadline for September entry is February 28.

#### \$34,000 Simon Fraser Scholarships

Recognize excellent academic performance and potential. Distributed over eight terms. Eligible for travel allowance.

#### \$29,000 Simon Fraser Alumni Leadership Scholarships

Recognize extraordinary leadership, community service, citizenship, and achievement of high academic standing. Distributed over eight terms. Eligible for travel allowance.

#### \$24,000 Gordon M. Shrum Scholarships

Recognize high academic standing and commitment to school and community service, volunteer activity, arts, or athletics. Distributed over eight terms. Eligible for travel allowance.

#### \$24,000 Shad Valley Shrum Scholarship

In addition to the Shrum criteria noted above, this scholarship recognizes outstanding achievement and participation in the Shad Valley program. Distributed over eight terms. Eligible for travel allowance.

#### \$10,000 Tadeusz Specht Memorial Scholarships in Science

Recognize academic excellence. Awarded to students entering the Faculty of Science or Health Sciences and pursuing studies in biology, microbiology, chemistry, biochemistry, biomedical physiology and kinesiology, or other health-related sciences. Eligible for travel allowance. Distributed over four terms.

#### \$7,000 Dean's Scholarships

Dean's Scholarships are awarded within each of the Faculties of Applied Sciences; Arts and Social Sciences; Business Administration; Education; Environment; Communication, Art and Technology, Health Sciences; and Science, to recognize academic achievement and potential in a particular area of study. Distributed over four terms. Eligible for travel allowance.

#### \$5,000 Lohn Foundation Entrance Award

The award is offered based on financial need to entering high school students with a minimum 80% admission average and demonstrated commitment to volunteer activities. To be considered eligible, candidates should demonstrate their involvement in unpaid volunteer activities by providing their resumé and cover letter describing their volunteerism, the length of service and time-commitment dedicated to such interests and including a letter of reference from a supervisor of the candidate's volunteer work.

Completion of the Application for Student Financial Aid form is required. See [students.sfu.ca/financialaid](http://students.sfu.ca/financialaid). Not eligible for travel allowance.

#### \$5,000 H.Y. Louie Entrance Award

The awards are offered based on financial need to students with a minimum 80% admission average and demonstrated commitment to volunteer activities. To be considered eligible, candidates should demonstrate their involvement in unpaid volunteer activities by providing their resume and cover letter describing their volunteerism, the length of service and time commitment dedicated to such interests and including a letter of reference from a supervisor of the candidate's work.

Completion of the Application for Student Financial Aid form is required. See [students.sfu.ca/financialaid](http://students.sfu.ca/financialaid). Not eligible for travel allowance.

#### \$2,500 Aboriginal Entrance Award

Awarded to Canadian aboriginal students entering Simon Fraser University from high school (minimum 80% average) or a BC College (minimum 3.0 average) who have a living connection to their aboriginal community. Eight awards will be granted annually. Must submit an application by the following deadlines: April 30 for the fall term. September 30 for the spring term, and January 30 for the summer term.

#### \$2,000 Community Entrance Awards

The Community Entrance Awards will be available for students entering the University in the fall term from areas of British Columbia that are under-represented at Simon Fraser University. Valued at \$2,000, the Awards will recognize students who have demonstrated a commitment to school and/or community leadership, the contemporary arts or the sciences. A minimum average of 80% is required and up to six awards will be made. Not eligible for travel allowance.

#### \$2,000 SFU Surrey Entrance Awards

The SFU Surrey Entrance Awards recognize exceptional academic and community achievement of BC secondary school students, particularly those residing in locations south of the Fraser River. A series of awards are available to applicants of the first-year cohort programs at Simon Fraser University Surrey. Students who apply for direct admission to the Faculty of Business Administration, the School of Computing Science, the Mechatronic Systems Engineering Program, or the School of Interactive Arts and Technology at the Surrey campus are also eligible to apply for the awards. Applicants for the award need a minimum admission average of 80%. Not eligible for travel allowance.

#### City of Surrey Memorial Employee Entrance Awards

One \$1,000 award will be provided to a student entering Simon Fraser University with satisfactory academic standing, volunteer or community involvement, and is a dependent of a City of Surrey employee, or a City of Surrey employee who has passed away.

#### Dr. Gordon Diewert Annual Community Service Entrance Award

A \$1,000 award will be granted on the basis of good academic performance, leadership, and community service to a graduating student from New

Westminster Secondary School who is attending Simon Fraser University. The recipient must have attended Dry Grad.

#### Dr. Gordon L. Diewert Memorial Entrance Scholarship

A scholarship will be awarded in the fall term to a graduating student from New Westminster Senior Secondary School, who is planning to pursue a major in kinesiology at Simon Fraser University. Applicants must have a record of community service, involvement in athletics and a high academic standing. The successful applicant will be recommended by the scholarship and bursary committee of New Westminster Senior Secondary School. Not eligible for travel allowance.

#### Mona F. East Memorial Entrance Scholarship

This fund provides a scholarship annually for the student graduating from Similkameen Secondary School with the highest standing and who will be attending Simon Fraser University. The amount of the award will vary, depending upon the accrued interest of the fund. Not eligible for travel allowance.

#### Rotary Club of Vancouver Sunrise Entrance Scholarship

The Rotary Club of Vancouver Sunrise provides an annual entrance scholarship from the interest earned on the endowment. The scholarship will be based on academic merit with preference for an entering student from King George Secondary School. The recipient of the scholarship will be invited to make a presentation at a meeting of the Rotary Club of Vancouver Sunrise. Not eligible for travel allowance.

### For Canadian High School Students – No Application Required

All entering Canadian high school students are considered automatically for the following scholarships; no applications are required.

#### \$20,000 Lloyd Carr-Harris Foundation Entrance Scholarship in Business Administration

This award is offered to an entering high school student of the highest academic standing who also obtains direct admission into the Faculty of Business Administration. The award is distributed over eight terms. Not eligible for a travel allowance.

#### \$5,000 Academic Excellence Entrance Scholarships

Recognize academic excellence for high school students within Canada. Students entering directly from high school with a 95% average will automatically receive an offer of this scholarship. Distributed over two terms. Eligible for travel allowance.

#### \$4,000 Jack Diamond National Entrance Awards

Recognize academic and athletic excellence. Potential candidates are identified by Simon Fraser University, and nominated by our Director of Recreation and Athletics. Eligible for travel allowance. Distributed over two terms.

#### \$3,500 Kenneth Strand National Scholarships

Recognize academic excellence for students outside of BC. Students entering directly from high school with a 90% average will automatically receive an offer of this scholarship. Eligible for travel allowance. Distributed over two terms.

#### \$3,500 Summit Scholarships

Recognize academic excellence for students within BC. Students entering directly from high school with a 90% average will automatically receive an offer of this scholarship. Eligible for travel allowance. Distributed over two terms.

## For BC College Students – Application Required

*BC College scholarship application deadlines:*

April 30 for admission to the fall term, September 30 for the spring term, and January 31 for the summer term.

### \$10,000 Honourable William M. Hamilton Scholarships

Recognize academic excellence and leadership potential. Distributed over four terms. Eligible for travel allowance.

### Columbia College Entrance Scholarship

This award provides financial support for an alumnus of Columbia College who will be attending Simon Fraser University. The award may be disbursed over one or two terms, pending interest income from the endowment fund. Applicants must have graduated from Columbia College and be enrolled at Simon Fraser and show distinct promise of achievement at the undergraduate level. Applicants must also provide a letter of application and resume summarizing all awards, medals and prizes, leadership initiatives, and service as well as two letters of reference and certified copy of school transcript. Submit all documentation to Financial Aid and Awards at Simon Fraser University by May 30th. Not eligible for travel allowance.

## For BC College Students – No Application Required

### \$3,500 Ken Caple Scholarships

Recognize outstanding academic performance. Students with a 3.70 transfer average from a BC college or BC university transfer program may automatically receive an offer of this scholarship. Distributed over two terms. Eligible for travel allowance.

## For International Students – Application Required

### \$40,000 (plus tuition) W. Ronald Heath International Entrance Scholarships

Recognize international students attending United World Colleges who demonstrate academic excellence, school involvement, community service, leadership and volunteer activity. Distributed over eight terms. Eligible for travel allowance.

### \$10,000 Tadeusz Specht Memorial Scholarships in Science

Recognize academic excellence. Awarded to students entering the Faculty of Science or Health Sciences and pursuing studies in biology; microbiology; chemistry; biochemistry; biomedical physiology and kinesiology; or other health-related sciences. Eligible for travel allowance. Distributed over four terms.

### \$10,000 SFU ZU DDP Entrance Scholarships

Two SFU ZU DDP Entrance Scholarships are awarded annually on the basis of academic and/or personal achievement, to Zhejiang University students who are studying in the SFU ZU Dual Degree Program in Computing Science. Distributed over two terms. Not eligible for travel allowance.

### \$5,000 SFU ZU DDP Entrance Awards

Eight SFU ZU DDP Entrance Awards are awarded annually on the basis of academic and/or personal achievement, to Zhejiang University students who are studying in the SFU ZU Dual Degree Program in Computing Science. Distributed in one term. Not eligible for travel allowance.

### \$5,000 Lohn Foundation Entrance Award

The award is offered based on financial need to entering high school students with a minimum 80% admission average and demonstrated commitment to volunteer activities. To be considered eligible, candidates should demonstrate their involvement in

unpaid volunteer activities by providing their resumé and cover letter describing their volunteerism, the length of service and time-commitment dedicated to such interests, and including a letter of reference from a supervisor of the candidate's volunteer work. Completion of the Application for Student Financial Aid form is required. See [students.sfu.ca/financialaid](http://students.sfu.ca/financialaid). Not eligible for travel allowance.

### \$5,000 H.Y. Louie Entrance Award

The awards are offered based on financial need to students with a minimum 80% admission average and demonstrated commitment to volunteer activities. To be considered eligible, candidates should demonstrate their involvement in unpaid volunteer activities by providing their resumé and cover letter describing their volunteerism, the length of service and time commitment dedicated to such interests, and including a letter of reference from a supervisor of the candidate's work. Completion of the Application for Student Financial Aid form is required. See [students.sfu.ca/financialaid](http://students.sfu.ca/financialaid). Not eligible for travel allowance.

### \$5,000 Mitsubishi Corporation International Scholarship

Two awards will be given annually on the basis of the highest academic performance to students who graduate from a high school in any developing country worldwide (outside the G8 list of countries), and are accepted at an undergraduate program at Simon Fraser University.

### \$3,500 Phi Theta Kappa International Summit Scholarships

Recognize Phi Theta Kappa members with a minimum 3.75 GPA on minimum 30 units from a US college. Part-time students and students with a previous bachelor degree are not eligible. Distributed over two terms. Eligible for travel allowance.

Up to three entrance scholarships are made available for Phi Theta Kappa members with a minimum 3.75 GPA. A minimum of 30 units required for application. Part-time students and students with a previous bachelors degree are not eligible. Eligible for travel allowance.

*Deadlines:* April 30 for admission to the fall term, September 30 for the spring term, and January 31 for the summer term.

### Stanley Morisse Memorial Scholarships

The Stanley Morisse Memorial Scholarship is awarded to a student transferring from the University of Cyprus or a Cypriot secondary school. The amount of the award is determined by the amount of interest earned on the endowment.

### YW Fong Annual Entrance Exchange Scholarship

Two scholarships, valued at a maximum of \$3,200 (\$400 per term) will be awarded annually to an entering Simon Fraser University student who graduated from an educational institution in the People's Republic of China or in Hong Kong.

## For International Students – No Application Required

### \$5,000 International Academic Excellence Entrance Scholarships

Recognizes academic excellence and potential. International students entering directly from high school with a 95% average (or equivalent) will automatically receive an offer of this scholarship. This scholarship is entitled to the one-time travel allowance. Distributed over two terms.

### \$3,500 International Summit

Recognizes academic excellence and potential. International students entering directly from high school with a 90% average (or equivalent) or from a BC college with a high transfer average, will automatically receive an offer of this scholarship. This

scholarship is entitled to the one-time travel allowance. Distributed over two terms.

## Scholarships for Continuing Students

### Regulations

The following regulations govern all university, private and endowed scholarships for continuing students over which the University has jurisdiction.

- A minimum 3.50 CGPA is required to be eligible for a scholarship.
- The student must be enrolled in a minimum of nine units of normally graded courses in the term of eligibility, unless otherwise stipulated. Challenge, audit and credit free courses are not considered. Students who enrol in fewer than nine units or subsequently drop below nine units may have their scholarships cancelled.
- The student must have completed at least nine units of normal graded courses at the University to be considered for most private and endowed scholarships.
- A student holding an ongoing Simon Fraser University Entrance Scholarship is not eligible for any other University administered scholarships until the entrance scholarship is fully paid out. This policy applies to any term in which an entrance scholarship is deferred.
- Funds will be credited to the successful student's University account. Outstanding University debts will be deducted from the scholarship funds before a cheque for the credit balance is issued.
- The student must apply using the Simon Fraser University Private Scholarship paper application form which is available at <http://students.sfu.ca/financialaid>. It is the student's responsibility to meet applicable deadlines and supply all required documentation. Incomplete applications may be rejected.
- Unless otherwise stated, scholarships are tenable only at Simon Fraser University.
- Candidates are permitted to hold concurrently more than one academic award only with the permission of Financial Aid and Awards.
- Scholarships are tenable for the term indicated and will not normally be deferred. Students who do not enrol in the term for which the scholarship is granted forfeit the award. To be considered for future private or endowed scholarships, students must reapply.

## Undergraduate Open Scholarship Program

The Undergraduate Open Scholarship recognizes and supports undergraduate students who are highly qualified academically and awards scholarships to students on a term by term basis.

### Eligibility

Eligibility is limited to students pursuing a first degree and will expire when a student's total accumulated units (including transfer units) exceed by 10% the minimum number of units required to complete the degree program in which the student is enrolled. (e.g., a student whose major program requires 120 units to graduate becomes ineligible when her/his total accumulated credit and transfer credit exceeds 132 units.)

To qualify, a student must have

- successfully completed at least 24 Simon Fraser University units
- a Simon Fraser University cumulative grade point average (CGPA) of 3.67 or higher.
- a minimum term GPA of 3.50 in the last term of enrolment
- been enrolled in one of the last three terms
- complete at least 24 units of normally graded courses over your last three terms of enrolment in

such courses. For students who fall short of the 24 unit requirement because one term's enrolment was in a single course of five units or fewer, the last four terms will be considered and that term of one course will be set aside in determining unit and term GPA eligibility. A student recognized as being required to take an ongoing maximum 40% course load based upon a confirmed permanent disability must complete at least 24 units of normally graded courses over the last four terms of enrolment in such courses.

All eligibility requirements must be met.

International undergraduate students are eligible on the same basis as other students.

Co-operative education students will be eligible subject to normal program guidelines. Job practicum courses, however, are excluded from the calculations (i.e., the scholarship does not cover the co-op fee). Enrolment in normally graded courses during a co-op term may affect eligibility. Co-op students should seek advice about this scholarship before enrolling in normally-graded courses while also enrolling in a co-op term.

Graduate students, including qualifying, special and exchange students, are not eligible for this scholarship.

No application is required. All undergraduate students are considered for eligibility each term; eligible undergraduate students will be notified no later than the end of the fourth week of classes.

#### *Monetary Value*

The value of the scholarship is set by the University as a portion of the actual tuition costs accrued by those eligible.

The per unit rate for normally graded courses will be determined based on the availability of funds. The per unit rate will be set for a value within a range of \$70 to \$110 each term.

### Scholarships for All Students

#### **Hy Aisenstat Scholarship**

Program code: UESO-517

Value: \$2500

Awarded: fall, spring, summer

Terms of reference: To undergraduate students with experience in the hospitality industry who are returning to university. Please document eligibility.

#### **Alumni Scholarship and Bursary Endowment Fund**

Program code: UESO-253

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To undergraduate students who meet the minimum scholarship regulations.

#### **Dr. Aimee August Undergraduate Annual Scholarship**

Program code: UPAO-214

Value: \$1000

Awarded: fall, summer

Terms of reference: Awards will be granted annually in the summer term to a student of aboriginal ancestry. The purpose of this award is to provide educational support to a student enrolled in the Simon Fraser University Kamloops program who best demonstrates good academic standing combined with an appreciation for aboriginal language and culture. The Simon Fraser University Kamloops program scholarship committee will put forward a nomination based on the application received. Eligibility requirements:

- applicants must be of aboriginal ancestry and enrolled as full-time students (three courses or more in an academic term). The award is restricted to students who have successfully completed a

minimum 24 units in this Simon Fraser University program.

- the student must demonstrate full-time enrollment in one of the previous three consecutive academic terms, since this is being awarded in the summer term.
- applicants must demonstrate sensitivity to the unique cultural and linguistic traditions of the aboriginal people. The committee will consider such criteria as student's extra-curricular activities within aboriginal organizations, personal research and the nature of studies being pursued. The Kamloops program scholarship committee may weigh such factors as parental and marital status, part-time employment and band assistance in their decision.

#### **Japanese-Canadian Centennial Scholarship**

Program code: UPSO-255

Value: \$750

Awarded: fall, spring

Terms of reference: To a Japanese-Canadian student residing in British Columbia and enrolled in the first year of study at Simon Fraser University. Eligibility for this scholarship will be based on scholastic ability, character, promise of achievement and participation in extracurricular activities. Applications will be considered from first year students.

#### **Sulzer Pumps Inc. Undergraduate Scholarship**

Program code: UPSO-286

Value: \$1000

Awarded: spring

Terms of reference: Granted to an undergraduate student in any faculty based on academic merit. Preference will be given to applicants who are Sulzer Bingham employees; sons, daughters or legal dependants of Sulzer Bingham Pumps Inc. employees; or residents of Burnaby.

#### **University Women's Club of Vancouver Scholarship**

Program code: UESO-526

Value: \$1500

Awarded: spring

Terms of reference: Awarded to an undergraduate student in any faculty based on scholastic merit.

#### **Vancouver Korean Canadian Scholarship Foundation Scholarship Award**

Program code: UPSO-294

Value: \$1000

Awarded: spring

Terms of reference: Granted annually in any term to an undergraduate student in any faculty. The scholarship will be granted based on academic excellence.

### Scholarships for Applied Sciences Students

#### **Association of Professional Engineers and Geoscientists Scholarship**

Program code: UPSO-275

Value: \$1500

Awarded: fall

Terms of reference: To a student with a high academic standing who is entering the second year of engineering science at Simon Fraser University. The assessment of academic standing will be based upon previous performance during the first year of engineering at another BC post-secondary institution. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the School of Engineering Science scholarship committee.

#### **Paul Coté Endowment Scholarship in Engineering**

Program code: UESO-213

Value: \$600

Awarded: spring

Terms of reference: To an engineering science student enrolled in the Faculty of Applied Sciences. The scholarship will be awarded on the basis of high academic performance to a student who has completed at least 60 units at Simon Fraser University. This scholarship has been established by the Board of Governors.

#### **Ken and Su Jang Scholarship for Women in Science**

Program code: UESO-276

Value: \$1700

Awarded: fall

Terms of reference: To an undergraduate female student in the Faculty of Applied Sciences or the Faculty of Science. The award will be based on academic merit.

#### **Kodak Graphic Communications Canada**

Program code: UPSO-214

Value: \$1000

Awarded: spring

Terms of reference: To engineering science students in the Faculty of Applied Sciences who have successfully completed at least one year. Students will require a nomination from the faculty, who will give consideration to academic standing as well as talent and interest expressed by the student in electro-optics, precision mechanics or instrumentation.

#### **Elma Krbavac Undergraduate Scholarship in Computing Science**

Program code: UESO-322

Value: \$2000

Awarded: fall

Terms of reference: To an undergraduate student in computing science based on high academic standing and demonstrated volunteer involvement. Candidates should demonstrate their involvement in volunteer activities by providing such details in a resume and cover letter with their application.

#### **Matthew LeDuc Memorial Scholarship in Computing Science**

Program code: UESO-329

Value: \$450

Awarded: spring

Terms of reference: Awarded on the basis of academic achievement to a computing science major, with demonstrated excellence in the field of computer graphics.

#### **Joe and Mary Merchant Scholarship**

Program code: UESO-309

Value: \$750

Awarded: summer

Terms of reference: A scholarship, based on scholastic merit, will be awarded to a full-time third or fourth year undergraduate student in the Faculty of Science or the Faculty of Applied Sciences.

#### **Basil Peters/High Tech Exchange Group Scholarship**

Program code: UESO-239

Value: \$500

Awarded: spring

Terms of reference: The scholarship is given, based on academic merit, to upper level students in the engineering science program studying in the areas of high frequency electronics. The scholarships will be made by the Senate Undergraduate Awards Adjudication Committee on the recommendation of the School of Engineering Science.

#### **J. Newton Robinson Memorial Scholarship**

Program code: UESO-242

Value: \$200

Awarded: fall

Terms of reference: To a computing science major who has completed 60 units at Simon Fraser University. The scholarship will be based upon academic performance. This endowment has been

established in memory of J. Newton Robinson, former member of the Simon Fraser University Board of Governors.

#### **Scotiabank Student Scholar in the Faculty of Applied Sciences Award**

Program code: UESO-311

Value: \$1800

Awarded: summer

Terms of reference: The award will be granted to a Faculty of Applied Sciences student with at least 90 units who exemplifies the aspects of a well-rounded student scholar: academic excellence, and community involvement. Academic excellence is based on academic merit as determined by cumulative grade point average (CGPA). Community involvement may be service to the University community or the community at large.

#### **Simba Technologies Inc. Scholarships in Computing Science**

Program code: UESO-530

Value: \$500

Awarded: summer

Terms of reference: To an approved computing science student on the basis of academic performance and documented community service. Applications for the scholarship should also include a letter and résumé chronicling volunteer service in the community. When possible, preference will be given to a female student.

#### **Sophos Annual Computing Science Scholarship**

Program code: UPSO-316

Value: \$1000

Awarded: spring

Terms of reference: Granted to a third or fourth year undergraduate student enrolled as a computing science major on the basis of excellent academic standing. Preference may be given to a student with academic or industry experience in software security. The award will be made by the Senate Undergraduate Awards Adjudication Committee based upon a nomination of the Chair, School of Computing Science.

#### **Paul and Helen Trussell Science Scholarship Fund**

Program code: N/A

Value: \$20000

Awarded: fall

Terms of reference: To a student entering their last two years of undergraduate study at a BC university or college. The applicant must be a Canadian citizen or Permanent Resident, and have completed secondary schooling in the Kootenay-Boundary area (School Districts No. 1-13 inclusive). To qualify, a candidate must be pursuing an undergraduate program leading to at least a master's or PhD degree in natural or applied sciences, such as agriculture, engineering, forestry and fisheries. The award will cover the last two undergraduate years and the first two graduate years. Normally, a student must complete a minimum of 12 units of graded course work each term during tenure of the scholarship and maintain a 75% average. Apply to Science Council of British Columbia. [http://www.scbc.org/programs/scholarship\\_trussell.html](http://www.scbc.org/programs/scholarship_trussell.html)

#### **University Women's Club of Vancouver Women in Science Scholarship**

Program code: UESO-260

Value: \$1200

Awarded: fall

Terms of reference: To a female student enrolled in the Faculty of Science. The award is open to third or fourth year students majoring in science or applied science programs. A recommendation from the dean of science and/or the dean of applied science is required.

#### **Weyerhaeuser Company Limited Scholarship in Engineering Science and Environmental Science**

Program code: UPSO-302

Value: \$3000

Awarded: fall

Terms of reference: The scholarship is awarded on the basis of exceptional academic performance to an undergraduate student with an approved major in engineering science and environmental science. The scholarship will rotate these approved majors in a three-year cycle outlined as thus: Year 1: approved major in engineering science, Year 2: approved major in environmental science with emphasis on quantitative techniques in resource management, Year 3: approved major in environmental science with any emphasis except quantitative techniques in resource management. When possible, preference will be given to students from a Weyerhaeuser operating community in Canada. The award is granted by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School of Engineering Science or the director, Department of Environmental Science.

#### **Scholarships for Arts and Social Sciences Students**

##### **Father Michael Bach Memorial Scholarship**

Program code: UESO-256

Value: \$1000

Awarded: fall

Terms of reference: To an undergraduate student enrolled in either the third or fourth year of the humanities program. Friends, relatives and colleagues of the late Father Michael Bach have established an endowment fund to support one or more scholarships in the humanities program. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the department in recognition of outstanding scholastic ability.

##### **Mary Batchelor Memorial Scholarship**

Program code: UESO-257

Value: \$1500

Awarded: spring

Terms of reference: To a student in the psychology major or honors program. Selection by the Department of Psychology will be based upon academic achievement and extracurricular involvement. Applicants must have completed at least 60 units, of which 30 units are of Simon Fraser University course work, and must also include a résumé with their applications.

##### **Arthur and Eva Bell Award in Business Administration or Economics**

Program code: UPSO-203

Value: \$500

Awarded: fall

Terms of reference: To students in second, third or fourth year of business administration or economics. Eligibility is based on need for financial assistance and high academic standing. Students must provide a copy of their current transcript with the application.

##### **BOMA Undergraduate Scholarship in Urban Studies**

Program code: UESO-306

Value: \$1800

Awarded: spring

Terms of reference: Awarded to an undergraduate student in the certificate in urban studies program based on scholastic merit.

##### **Linda Brideau Memorial Scholarship**

Program code: UESO-206

Value: \$1100

Awarded: fall

Terms of reference: To an undergraduate student who is majoring in criminology. The award will be based on

academic excellence and preference will be given to a student in the honors program or who has completed at least two years of study at Simon Fraser University.

##### **Chien's Cultural Foundation Scholarship**

Program code: UESO-521

Value: \$600

Awarded: fall

Terms of reference: To an undergraduate student in the Faculty of Business Administration, or in the Faculty of Arts, preferably in political science. The scholarship will be granted on the basis of outstanding academic performance.

##### **School of Criminology Alumni Scholarships**

Program code: UESO-318

Value: \$500

Awarded: summer

Terms of reference: Scholarships will be granted on the basis of academic performance to students in the School of Criminology.

##### **Peter Crocker Annual Scholarship in Psychology**

Program code: UPSO-309

Value: \$1000

Awarded: spring

Terms of reference: Awarded annually in the Spring term to an undergraduate student entering their 3rd or 4th year of study who is interested in sport, exercise, or health psychology. Applications must include a resume outlining the candidate's research interests. In the event that no suitable applicant is identified in a given year, two scholarships may be awarded in the subsequent year.

##### **Department of French Award For Excellence**

Program code: UESO-328

Value: \$700

Awarded: summer

Terms of reference: The award will be given annually to a student pursuing a French major or a French honors program on the basis of academic excellence and service to the Department of French or the French department student union. Applications should include a resume outlining the student's volunteer activities. The award will be made by the Undergraduate Awards Adjudication Committee on the nomination of the chair of the Department of French.

##### **Mahatma Gandhi Humanitarian Scholarship**

Program code: UPSO-220

Value: \$400

Awarded: fall

Terms of reference: Offered by Dr. and Mrs. Devendra P. Goel to a student who has demonstrated overall excellence in the humanities program. Nomination required from the director of the humanities program.

##### **Dr. Alfredo E. Hurtado Memorial Scholarship**

Program code: UESO-274

Value: \$1100

Awarded: spring

Terms of reference: To an undergraduate student majoring in Spanish and/or Latin American studies.

##### **Pauline Jewett Scholarship**

Program code: UESO-524

Value: \$400

Awarded: summer

Terms of reference: To the student who has the highest CGPA among political science majors who has surpassed 90 units during that term. To be eligible, the student must have taken at least two 200 division and at least three senior (300 or 400 division) courses in Simon Fraser University's Department of Political Science. The awards will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair of the Political Science department.



**Lorne M. Kendall Memorial Scholarship in Psychology**

Program code: UESO-228

Value: \$375

Awarded: summer

Terms of reference: To an undergraduate or graduate psychology student who, in the previous year, has best exemplified Dr. Kendall's approach to psychology. Nominations for the award will be made by faculty members of the Department of Psychology. The recipient will be selected by the chair of the department, after consultation with the chair of the undergraduate and graduate studies committees.

**Jerry and Belle Lundie Memorial Scholarship**

Program code: UPSO-231

Value: \$500

Awarded: spring

Terms of reference: Available to students in their second, third or fourth year of undergraduate study. One scholarship is available to a student majoring in business management and the other scholarship is available to an economics major. Applicants must be Canadian citizens and residents of BC. Preference will be given to physically challenged students. The scholarships are made available by the Credit Union Foundation of BC, in honor of Mr. and Mrs. J. Lundie, who were credit union pioneers.

**Ted and Emily McWhinney Scholarship in International Studies**

Program code: UESO-532

Value: \$500

Awarded: summer

Terms of reference: Awarded annually to fourth year or graduating undergraduate students enrolled in the International Studies Program on the basis of outstanding academic achievement in course work and research.

One scholarship will be given to a student whose academic excellence is related to course work and research focused on Greece and the Balkans, from the 20th Century forward and the second scholarship will be given to a student whose academic excellence is related to course work and research focused on India, from the establishment of the Republic of India in 1947 on. The award will be made by the Senate Undergraduate Awards Adjudication Committee based upon the nomination of the Chair, Hellenic Studies and the Director, School of International Studies

**Ann and William Messenger Undergraduate Scholarships in English**

Program code: UESO-330

Value: \$2000

Awarded: fall, spring

Terms of reference: Awarded on the basis of academic achievement to approved English majors who have completed at least 90 units.

**Robbie Robertson Scholarship in Gerontology**

Program code: UPSO-273

Value: \$1000

Awarded: fall

Terms of reference: The Prince George branch of the Royal Canadian Legion will provide a scholarship to be awarded to a student enrolled in the gerontology diploma program who has an academic record of merit. Preference will be given, when possible, to a student from Prince George or surrounding areas. Students should apply on a Simon Fraser University private scholarship application form to be sent to the Gerontology Diploma Program, Simon Fraser University at Harbour Centre, 555 West Hastings Street, Vancouver, BC, V5B 5K3.

**Scotiabank Student Scholar in the Faculty of Arts Award**

Program code: UESO-312

Value: \$1800

Awarded: summer

Terms of reference: The award will be granted to a Faculty of Arts and Social Sciences student with at least 90 units who exemplifies the aspects of a well-rounded student scholar: academic excellence and community involvement. Academic excellence is based on academic merit as determined by cumulative grade point average (CGPA). Community involvement may be service to the University community or the community at large.

**John Stell Sykes Scholarship**

Program code: UESO-245

Value: \$430

Awarded: spring

Terms of reference: To a third or fourth year student who is a French major in a degree program. The scholarship will be adjudicated on the basis of proficiency in French and academic standing.

**Scholarships for Business Administration Students****Accenture Scholarship in Business Administration**

Program code: UESO-323

Value: \$1000

Awarded: spring

Terms of reference: To a full-time undergraduate student who is in their third year of study in the Faculty of Business Administration. To be considered eligible, candidates should have completed one 300 division management information systems course, demonstrate their involvement in extracurricular or volunteer activities and interest in information technology by providing their resume and cover letter specific to these interests, and include a letter of recommendation from a management information systems or computing science faculty member with their application.

**Bank of Montreal Undergraduate Scholarship in Business Administration**

Program code: UPSO-283

Value: \$1000

Awarded: fall

Terms of reference: To Business Administration students who intend to pursue a career in the financial industry upon graduation. Preference will be given to students in the finance area of concentration. At least one of the two awards will be given to a business administration co-op student.

**Keith and Betty Beedie Foundation Scholarship in Business Administration**

Program code: UESO-520

Value: \$1100

Awarded: fall

Terms of reference: To an undergraduate third or fourth year student in the Faculty of Business Administration with a concentration in either finance or accounting. Preference will be given to a graduate of either a Burnaby secondary school or Magee Secondary School. The scholarship will be granted on the basis of outstanding academic performance.

**Arthur and Eva Bell Award in Business Administration or Economics**

Program code: UPSO-203

Value: \$500

Awarded: fall

Terms of reference: To students in second, third or fourth year of business administration or economics. Eligibility is based on need for financial assistance and high academic standing. Students must provide a copy of their current transcript with the application.

**Faculty of Business Administration Alumni Scholarships**

Program code: UESO-316

Value: \$500

Awarded: summer

Terms of reference: Scholarships will be granted on the basis of academic performance to students in the Faculty of Business Administration.

**Chevron Canada Ltd Scholarship**

Program code: UESO-282

Value: \$1500

Awarded: fall

Terms of reference: To a student in their final year of an undergraduate program who intends to pursue a career in business. Preference will be given to a student who has graduated from a BC secondary school. At least one letter of recommendation from a dean or department chair must be submitted with the application.

**The Chief Information Officer Association of British Columbia Undergraduate Scholarship in Management Information Systems**

Program code: UPSO-308

Value: \$1500

Awarded: fall

Terms of reference: To a full-time, third year student in the management information systems concentration in the Faculty of Business Administration, on the basis of academic performance. Students must have completed 24 units in the preceding three terms. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the Faculty of Business Administration.

**Chien's Cultural Foundation Scholarship**

Program code: UESO-521

Value: \$600

Awarded: fall

Terms of reference: To an undergraduate student in the Faculty of Business Administration, or in the Faculty of Arts, preferably in political science. The scholarship will be granted on the basis of outstanding academic performance.

**Chinese Federation of Commerce of Canada Scholarship**

Program code: UESO-525

Value: \$1000

Awarded: spring

Terms of reference: Award is based on scholastic merit and will be given to a full-time undergraduate student in the Faculty of Business Administration.

**Cloverdale Paint Incorporated Scholarship**

Program code: UESO-272

Value: \$600

Awarded: spring

Terms of reference: To an undergraduate upper level student in the Faculty of Business Administration whose area of study is marketing. The award will be based on academic merit. Preference will be given to Cloverdale Paint employees or their children.

**Deloitte & Touche Scholarship in Accounting**

Program code: UPSO-247

Value: \$1250

Awarded: fall, spring

Terms of reference: Granted to a third year Faculty of Business Administration student in the accounting concentration who has the highest cumulative grade point average (CGPA).

**Barbara Dunfield Undergraduate Honours Semester at Segal Annual Scholarships**

Program code: UPSO-315

Value: \$1000-\$2500

Awarded: summer

Terms of reference: Awarded to students enrolled in the Faculty of Business Administration undergraduate honors semester at Segal on the basis on demonstrated academic performance. The awards will be made by the Senate Undergraduate Awards Adjudication Committee after receiving nominations from the Faculty of Business Administration.

**Financial Executives Institute Scholarship**

Program code: UPSO-219

Value: \$1500

Awarded: fall

Terms of reference: To an undergraduate third or fourth year student in the Faculty of Business Administration concentrating in the area of finance. The scholarship is based on academic merit.

#### **Great-West Life Scholarship in Business Administration**

Program code: UESO-324

Value: \$1000

Awarded: fall

Terms of reference: The award will be made to a full-time undergraduate student who is in their fourth year of study in the Faculty of Business Administration on the basis of academic performance and demonstrated volunteer involvement. To be considered eligible, candidates should demonstrate their involvement in volunteer activities by providing their resume and cover letter specific to these interests.

#### **Honourable William M. Hamilton Memorial Scholarship**

Program code: UESO-305

Value: \$2000

Awarded: fall, spring, summer

Terms of reference: The scholarship, based on academic merit, will be awarded to a student entering the Faculty of Business Administration at Simon Fraser University with at least 30 units.

#### **Bruce Howe Memorial Scholarship in International Business**

Program code: UESO-310

Value: \$900

Awarded: spring

Terms of reference: The award, based on academic merit, will be given to the top student in the Faculty in Business Administration in the international business concentration. The applicant should be a Canadian citizen or a permanent resident of Canada and have completed at least 90 units.

#### **Human Resources Management Association of BC Scholarship**

Program code: UPSO-226

Value: \$1500

Awarded: fall

Terms of reference: The scholarship will be granted to a Faculty of Business Administration student with an approved concentration in human resources management who has completed at least two human resources management courses at the 300 division.

#### **ICABC Business Administration Co-Op Education Scholarship**

Program code: UPSO-228

Value: \$2000

Awarded: spring

Terms of reference: To a full-time undergraduate student in the Faculty of Business Administration Co-operative Education Program (CA stream). Candidates should have completed at least one practicum work term after being accepted into the Co-operative Education program before eligibility is determined. The scholarship will be granted on the basis of academic performance, with consideration given to improved academic performance, and reports of practicum work performance and the expressed intent of becoming a chartered accountant. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of candidates by the co-ordinator, Business Administration Co-operative Education Accounting Program.

#### **ICABC Desmond O'Brien Memorial Scholarship**

Program code: UPSO-227

Value: \$2000

Awarded: spring

Terms of reference: To a full-time undergraduate student in the Faculty of Business Administration. The student will have completed 75 to 105 units inclusive, including the term of application, and must have at least nine units of accounting courses. The scholarship will be granted on the basis of academic performance.

#### **ISACA Vancouver Chapter Scholarship**

Program code: UPSO-300

Value: \$250

Awarded: summer

Terms of reference: The ISACA scholarship will be awarded to the top student of the year in BUS 426, an auditing course. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the Faculty of Business Administration.

#### **KPMG Annual Award in Accounting**

Program code: UPSO-307

Value: \$2500

Awarded: fall, spring

Terms of reference: To a third or fourth year student in the accounting concentration of a bachelor of business administration on the basis of demonstrated academic achievement, extra-curricular activities, community involvement, and the ability to lead others.

#### **Maria Kuchar Accounting Scholarship**

Program code: UESO-263

Value: \$5000

Awarded: fall

Terms of reference: Maria Kuchar Accounting Scholarships of approximately \$5000, awarded in two disbursements, will be awarded in the fall term to a third or fourth year undergraduate student in the Faculty of Business Administration majoring in accounting. When possible, preference will be given to a female student.

#### **Robert H. Lee Scholarship in Business Administration**

Program code: UESO-271

Value: \$1400

Awarded: fall

Terms of reference: To a third or fourth year student who is majoring in business administration. The award is also based upon academic achievement.

#### **Jerry and Belle Lundie Memorial Scholarship**

Program code: UPSO-231

Value: \$500

Awarded: spring

Terms of reference: Available to students in their second, third or fourth year of undergraduate study. One scholarship is available to a student majoring in business management and the other scholarship is available to an economics major. Applicants must be Canadian citizens and residents of BC. Preference will be given to physically challenged students. The scholarships are made available by the Credit Union Foundation of BC, in honour of Mr. and Mrs. J. Lundie, who were credit union pioneers.

#### **Methanex Robert Findlay Annual Undergraduate Scholarship in Management Information Systems**

Program code: UPSO-311

Value: \$3500

Awarded: fall

Terms of reference: To a student in his or her third or fourth year of study in the management information systems concentration in the Faculty of Business Administration. Academic achievement is the primary criterion in evaluating candidates, although demonstrated leadership and volunteerism in campus and community affairs may be taken into account. The scholarship recipient may be invited to apply for a co-operative education placement with Methanex should an opportunity be available.

#### **Gil Moser Memorial Scholarship**

Program code: UESO-238

Value: \$1400

Awarded: spring

Terms of reference: To a full-time student in the Faculty of Business Administration on the basis of high academic standing. This endowment fund has been established in memory of the late Gil Moser who served Simon Fraser University on its Board of Governors.

#### **Mr. Sub Scholarship in Business Administration**

Program code: UPSO-296

Value: \$500

Awarded: summer

Terms of reference: To a full-time student in the Faculty of Business Administration based on academic performance and demonstrated community volunteer involvement. Applications should include supporting document(s) describing such involvement.

#### **Pacific Blue Cross Scholarship in Management & Organizational Studies**

Program code: UPSO-304

Value: \$1000

Awarded: fall

Terms of reference: The scholarship will be made available, based on academic merit, to a third or fourth year student in bachelor of business administration concentrating in management and organizational studies.

#### **PricewaterhouseCoopers Co-operative Education Scholarship in Business Administration**

Program code: UESO-337

Value: \$500

Awarded: spring

Terms of reference: To a business administration student, preferably in the spring term, beginning his/her first co-operative education work term with a chartered accounting firm. Scholarships are available based on academic performance. The scholarship will be awarded by Senate Undergraduate Awards Adjudication Committee on the nomination of Faculty of Business Administration.

#### **PricewaterhouseCoopers Scholarships in Business Administration**

Program code: UESO-338

Value: \$1000

Awarded: fall

Terms of reference: To business administration majors with concentrations in accounting in their third year of their undergraduate degree program. One of the two scholarships is specifically available to an accounting major student participating in the Faculty of Business Administration accounting Co-operative Education program. Scholarships are available on the basis of academic performance.

#### **Robert Rogow Scholarship**

Program code: UESO-527

Value: \$2200

Awarded: spring

Terms of reference: Granted on the basis of academic merit, to undergraduate students in the Faculty of Business Administration with a concentration in human resources management. The recipient will have completed at least one SFU credit course offered by the Faculty of Business Administration in industrial relations or collective bargaining.

#### **Scotiabank Student Scholar in the Faculty of Business Administration Award**

Program code: UESO-313

Value: \$1800

Awarded: summer

Terms of reference: Award will be granted to a Faculty of Business Administration student with at least 90 units who exemplifies the aspects of a well-rounded student scholar: academic excellence and community

involvement. Academic excellence is based on academic merit as determined by cumulative grade point average (CGPA). Community involvement may be service to the University community or the community at large.

**Shell Canada Limited Scholarship in Business Administration**

Program code: UESO-264

Value: \$1000

Awarded: fall

Terms of reference: To a full-time undergraduate student enrolled in the co-op program of the Faculty of Business Administration.

**Vancouver Security Traders Association (VSTA) Annual Scholarship in Finance**

Program code: UPSO-310

Value: \$2000

Awarded: fall

Terms of reference: To a third year undergraduate business administration student with an approved concentration in finance on the basis of academic merit. The scholarship is renewable for a second year if the recipient maintains the scholarship requirements. Where possible, preference will be given to a student who has an interest in pursuing a career in equity trading and has completed the Canadian securities course or trader training course.

**Lis Welch Scholarship in Marketing**

Program code: UESO-522

Value: \$650

Awarded: fall

Terms of reference: Granted to an undergraduate student in the Faculty of Business Administration with a concentration in marketing, who is in third or fourth year. The award will be based on academic merit. Preference will be given to a female student who is a Canadian citizen or landed immigrant.

**Westminster Savings Barry Butler Memorial Scholarship**

Program code: UPSO-299

Value: \$2500

Awarded: fall

Terms of reference: The scholarship will be awarded in the fall term to an outstanding third or fourth year undergraduate student in the Faculty of Business Administration on the basis of academic performance.

**Grant Wilson Memorial Scholarship**

Program code: UESO-268

Value: \$3000

Awarded: fall

Terms of reference: To a BC student in the Faculty of Business Administration who is entering the final two terms of study at Simon Fraser University. The applicant must be planning to enter law school. This endowment fund has been established in memory of Grant Wilson by Stanley Pharmaceuticals Limited of North Vancouver, BC.

**Lorraine Wintrup Memorial Endowment Scholarship**

Program code: UESO-251

Value: \$190

Awarded: spring

Terms of reference: An endowment fund has been established in memory of Mrs. Lorraine Wintrup. A scholarship is available to a business administration student majoring in business management with preference being given to banking related courses. Please supply a copy of your transcript and indicate any business management and banking related courses.

**Mildred Wirtanen Scholarship in Business**

Program code: UESO-277

Value: \$2000

Awarded: fall, spring, summer

Terms of reference: To an undergraduate student in business administration who shows a significant improvement in academic studies.

**Scholarships for Communication, Art and Technology Students**

**Channel M Scholarship in Communication**

Program code: UESO-335

Value: \$1500

Awarded: fall

Terms of reference: The scholarship will be awarded based on academic merit in any term to students with an approved communication major. Preference will be given to students who are a member of a visible minority group. Recipients will be invited to Channel M for a tour at a mutually convenient time during the year in which they win the scholarship.

**School for the Contemporary Arts Scholarship**

Program code: UUAO-004

Value: \$2000

Awarded: fall

Terms of reference: The purpose of this award is to recognize achievement of excellence in the arts for outstanding artistic contribution, as evidenced in performance, exhibitions or research; as well as recognize leadership ability by providing an inspiring example to peers through the quality of artistic work, and by demonstrating ability to be self-motivated and self-directed in extra-curricular activities at Simon Fraser University or in the community at large. A 3.5 cumulative grade point average is required to receive and maintain the scholarship and full time enrolment must be maintained during the tenure of the scholarship. Further eligibility requires at least 48 graded units at Simon Fraser University, a declared major and acceptance by the School for the Contemporary Arts. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School for Contemporary Arts.

**School for the Contemporary Arts Alumni Scholarships**

Program code: UESO-317

Value: \$500

Awarded: summer

Terms of reference: Scholarships will be granted on the basis of academic performance to students in the School for the Contemporary Arts.

**Fred and Elaine Moonen Scholarship in Communication**

Program code: UESO-266

Value: \$1200

Awarded: fall, spring

Terms of reference: To students majoring in communication entering their fourth year of the communication program. Preference will be given to students in the honors program. A recommendation from a communication faculty member is required. Applications should be submitted to the director, School of Communication by January 2 (spring award) and by September 1 (fall award).

**Carla Salvail Scholarship in Communication**

Program code: UESO-531

Value: \$900

Awarded: fall

Terms of reference: Granted to a full-time student in the School of Communication on the basis of demonstrated academic excellence. Preference will be given to a student who has not only survived physical, emotional or other hardship in life but triumphed over those challenges. Applicants must provide documentation describing their experiences such as a personal statement, resume and/or letter of reference.

**Standard Broadcasting Corporation Limited Scholarship**

Program code: UESO-325

Value: \$1500

Awarded: spring

Terms of reference: The scholarship will be offered, based on academic performance, to full-time students in the information technology and interactive arts programs at the Simon Fraser University Surrey campus.

**Scholarships for Education Students**

**Carol and Gary Chapman Memorial Scholarship in Education**

Program code: UESO-518

Value: \$1500

Awarded: summer

Terms of reference: To an outstanding full-time student in the Faculty of Education's Professional Development Program based on academic merit and overall performance during the completion of the PDP practica. The award will be made by the Senate Undergraduate Awards Adjudication Committee on Scholarships, Awards and Bursaries on the nomination of the dean, Faculty of Education.

**Madge Hogarth Scholarships in Education**

Program code: UESO-224

Value: \$350

Awarded: summer

Terms of reference: Two awards will be made to the most promising students based on academic standing prior to entry into the Professional Development Program (PDP), although teaching performance may be considered. One scholarship will be awarded to a student who enters PDP in the fall term and one to a student who enters PDP in the spring term. The awards will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the Faculty of Education.

**John Rosborough Memorial Scholarship in Education**

Program code: UESO-326

Value: \$650

Awarded: summer

Terms of reference: The scholarship will be awarded to an outstanding student in the Faculty of Education's Professional Development Program based on academic merit, overall performance during the completion of the PDP practica, and a demonstrated interest in some aspect of information technology in the field of education. Applications for the scholarship should include a letter and resume chronicling involvement and interest with the information technology in education. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the dean, Faculty of Education.

**Scotiabank Student Scholar in the Faculty of Education Award**

Program code: UESO-314

Value: \$1800

Awarded: summer

Terms of reference: The award will be granted to a student in the Professional Development Program who exemplifies the aspects of scholarly and professional excellence and community involvement. Community involvement may be service to the faculty, the University community, or the community at large. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the dean, Faculty of Education.

**Ethel Barbara Tuck Undergraduate Scholarship in Education**

Program code: UESO-321

Value: \$2500

Awarded: fall, spring, summer

Terms of reference: Granted on the basis of outstanding academic performance to undergraduate upper division students who intend to pursue careers teaching children or youth and wish to develop skills in aiding pupils who have reading difficulties. The application should include a discussion of the student's interest in teaching remedial reading.

### Scholarships for Environment Students

#### Enid Harris Scholarship in Environmental Science

Program code: UESO-528

Value: \$1000

Awarded: fall

Terms of reference: To a student or students enrolled in their third or fourth year of the environmental science program at Simon Fraser University on the basis of demonstrated academic performance.

#### Ron MacLeod Scholarship in Environmental Science

Program code: UESO-307

Value: \$900

Awarded: spring

Terms of reference: Granted to a third or fourth year student in the Environmental Science Program on the basis of academic performance. The application should include a letter from the student describing his/her commitment to and interest in environmental science.

#### Port Metro Vancouver Undergraduate Scholarship in Geography

Program code: UPSO-284

Value: \$2500

Awarded: fall

Terms of reference: The scholarship, based on academic merit, will be given to a geography student entering the fourth year of studies. In order to receive the second disbursement, the student must maintain academic standards.

#### Beverley Raymond Scholarship in Biological Sciences or Environmental Studies

Program code: UEAO-065

Value: \$2500

Awarded: fall

Terms of reference: To an undergraduate student in biological sciences or environmental sciences who has demonstrated interest and aptitude in these fields through academic achievement (minimum CGPA 3.00) and outdoor activities. Preference will be given to a student in their graduating year of an honors program with an honors project relating to environmental studies. The application should include a letter from the student supporting their qualifications for the award and outlining their career plans and interest in the environment.

#### Mr. and Mrs. Erwin Sommer Scholarship in Earth Sciences/Geography

Program code: UESO-308

Value: \$1200

Awarded: fall

Terms of reference: Granted, in alternate, between geography and earth sciences students on the basis of academic merit to a student majoring in geography or earth sciences who has completed at least 90 undergraduate units including 12 upper division units in geography or earth sciences.

#### Weyerhaeuser Company Limited Scholarship in Engineering Science and Environmental Science

Program code: UPSO-302

Value: \$3000

Awarded: fall

Terms of reference: The scholarship is awarded on the basis of exceptional academic performance to an undergraduate student with an approved major in engineering science and environmental science. The scholarship will rotate these approved majors in a

three-year cycle outlined as thus: Year 1: approved major in engineering science, Year 2: approved major in environmental science with emphasis on quantitative techniques in resource management, Year 3: approved major in environmental science with any emphasis except quantitative techniques in resource management. When possible, preference will be given to students from a Weyerhaeuser operating community in Canada. The award is granted by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School of Engineering Science or the director, Department of Environmental Science.

### Scholarships for Health Sciences Students

#### Maud Mary Price Scholarship in Health Sciences or Sciences

Program code: UESO-336

Value: \$1000

Awarded: spring

Terms of reference: Awarded on the basis of demonstrated academic performance to a student or students enrolled in their first year, majoring in a program within the Faculty of Health Sciences or Faculty of Science at Simon Fraser University. Preference will be given to a student or students planning to pursue a career in nursing. Application packages must include a cover letter outlining the candidate's intention to pursue a career in nursing.

### Scholarships for Science Students

#### Association of Professional Engineers and Geoscientists of BC Scholarship in Earth Sciences

Program code: UPSO-306

Value: \$1500

Awarded: fall

Terms of reference: Awarded based on academic merit, to a fourth year student with an approved earth sciences major and proved participation in the Geology or environmental geoscience stream of earth sciences, leading to an eventual professional geoscientist designation. The award will be made by the Senate Undergraduate Awards Adjudication Committee on Scholarships Awards and Bursaries upon nomination by the chair, Earth Sciences.

#### April Allen Memorial Undergraduate Scholarship

Program code: UESO-529

Value: \$3000

Awarded: spring

Terms of reference: Granted to an undergraduate student(s) enrolled full-time in the actuarial science program. The award will go to a student within their first year of being admitted into one of the actuarial sciences programs who demonstrates excellence in academic performance and exhibits potential for success in the actuarial science field. Preference will be given to students who have personally been affected by cancer and/or have demonstrated leadership and/or service to an organization involved in cancer research and care. Students will apply to the chair of the Department of Statistics and Actuarial Science. The applications will include, if applicable, a resume outlining the candidate's leadership activities and volunteer service as well as letter(s) of recommendation confirming these activities. The award will be made by the Senate Undergraduate Awards Committee on the recommendation of the chair.

#### Chemistry Undergraduate Scholarship

Program code: UESO-332

Value: \$1000

Awarded: fall

Terms of reference: To an undergraduate student(s) in their final year of an approved major or honors degree

in chemistry on the basis of academic performance in upper level chemistry and nuclear science courses. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair of the Department of Chemistry.

#### R. Bruce Coles Memorial Scholarship

Program code: UESO-283

Value: \$600

Awarded: spring

Terms of reference: To a student in an approved actuarial science program who has completed ACMA 320. More than on scholarship may be made available. Scholarships will be granted on the basis of academic performance. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair, actuarial science.

#### Earth Sciences Undergraduate Scholarship

Program code: UESO-334

Value: \$2500

Awarded: fall

Terms of reference: To an undergraduate student(s) in their final year of an approved major or honors degree in earth sciences based on academic performance in upper level earth sciences courses.

#### Mrs. Shakuntala Goel Memorial Scholarship

Program code: UPSO-223

Value: \$400

Awarded: fall

Terms of reference: To a student who has demonstrated overall excellence in the Department of Mathematics. Nomination required from the chair of mathematics. This scholarship has been established by Dr. and Mrs. D.P. Goel in memory of Mrs. Shakuntala Goel.

#### Harold Hancheroff Memorial Scholarship in Sports Education

Program code: UESO-523

Value: \$900

Awarded: spring

Terms of reference: To a full time student in the School of Kinesiology, who is pursuing an honors degree in sports education. The scholarship is also based upon academic merit.

#### Ken and Su Jang Scholarship for Women in Science

Program code: UESO-276

Value: \$1700

Awarded: fall

Terms of reference: To an undergraduate female student in the Faculty of Applied Sciences or the Faculty of Science. The award will be based on academic merit.

#### School of Kinesiology Alumni Scholarships

Program code: UESO-319

Value: \$500

Awarded: summer

Terms of reference: Scholarships will be granted on the basis of academic performance to students in the School of Kinesiology.

#### William and Amelia McMahan Scholarships

Program code: UESO-233

Value: \$1200

Awarded: fall

Terms of reference: To students who are enrolled in full time course programs in the Faculty of Science, who are in their second, third or fourth year of study on the basis of academic achievement. Preference will be given to children of employees or former employees of the logging and pulp industries of BC.

#### Patrick Duncan McTaggart-Cowan Award in Physical Sciences

Program code: UESO-234

Value: \$550

Awarded: spring

Terms of reference: This scholarship fund was established in honour of Dr. Patrick Duncan McTaggart-Cowan. This fund will provide for a student in the physical sciences on the basis of academic achievement and potential, with consideration being given to financial need. Special consideration will be given to a student who plans to proceed to studies in meteorology or the atmospheric sciences or who has demonstrated interest or aptitude in these fields, and preference might be given to a third year student going into the graduating year in an honors program.

#### **Joe and Mary Merchant Scholarship**

Program code: UESO-309

Value: \$750

Awarded: summer

Terms of reference: A scholarship, based on scholastic merit, will be awarded to a full-time third or fourth year undergraduate student in the Faculty of Science or the Faculty of Applied Sciences.

#### **Molecular Biology and Biochemistry Undergraduate Scholarship**

Program code: UESO-333

Value: \$950

Awarded: fall

Terms of reference: To an undergraduate student(s) in their final year of an approved major or honors degree in molecular biology and biochemistry on the basis of academic performance.

#### **Pacific Blue Cross Scholarship in Actuarial Science**

Program code: UPSO-303

Value: \$1000

Awarded: spring

Terms of reference: The scholarship will be made available, based on academic merit, to a third or fourth year student with a declared major in actuarial science. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair, Department of Statistics and Actuarial Science.

#### **Evelyn and Leigh Palmer Scholarship**

Program code: UESO-267

Value: \$2200

Awarded: fall

Terms of reference: The scholarships are granted in any term based on academic merit to undergraduate students in a major or honors program in the physical sciences (physics, applied physics, mathematical physics, chemical physics, chemistry, molecular biology and biochemistry, or physics and physiology). Applicants should have completed at least 60 Simon Fraser University term units toward the requirements for a degree and have completed at least 30 units in two of the last three terms in which they were enrolled.

#### **Maud Mary Price Scholarship in Health Sciences or Sciences**

Program code: UESO-336

Value: \$1000

Awarded: spring

Terms of reference: Awarded on the basis of demonstrated academic performance to a student or students enrolled in their first year, majoring in a program within the Faculty of Health Sciences or Faculty of Science at Simon Fraser University. Preference will be given to a student or students planning to pursue a career in nursing. Application packages must include a cover letter outlining the candidate's intention to pursue a career in nursing.

#### **Quadra Chemicals Ltd. Scholarship**

Program code: UESO-270

Value: \$750

Awarded: spring

Terms of reference: To a full-time undergraduate student who is enrolled in second, third, or fourth year of study, majoring in either chemistry or biochemistry in the Faculty of Science. Applicants must

demonstrate exceptional ability and not be recommended for an NSERC Summer Research Scholarship.

#### **Beverley Raymond Scholarship in Biological Sciences or Environmental Studies**

Program code: UEAO-065

Value: \$2500

Awarded: fall

Terms of reference: To an undergraduate student in biological sciences or environmental sciences who has demonstrated interest and aptitude in these fields through academic achievement (minimum CGPA 3.00) and outdoor activities. Preference will be given to a student in their graduating year of an honors program with an honors project relating to environmental studies. The application should include a letter from the student supporting their qualifications for the award and outlining their career plans and interest in the environment.

#### **Faculty of Science Alumni Scholarships**

Program code: UESO-320

Value: \$500

Awarded: summer

Terms of reference: Scholarships will be granted on the basis of academic performance to students in the Faculty of Science.

#### **Scotiabank Student Scholar in the Faculty of Science Award**

Program code: UESO-315

Value: \$1800

Awarded: summer

Terms of reference: The award will be granted to a Faculty of Science student with at least 90 units who exemplifies the aspects of a well-rounded student scholar: academic excellence and community involvement. Academic excellence is based on academic merit as determined by cumulative grade point average (CGPA). Community involvement may be service to the University community or the community at large.

#### **Mr. and Mrs. Erwin Sommer Scholarship in Earth Sciences/Geography**

Program code: UESO-308

Value: \$1200

Awarded: fall

Terms of reference: Granted, in alternate, between geography and earth sciences students on the basis of academic merit to a student majoring in geography or earth sciences who has completed at least 90 undergraduate units including 12 upper division units in geography or earth sciences.

#### **Trans-Canada Pipelines Research Scholarship in Chemistry**

Program code: UESO-261

Value: \$600

Awarded: spring

Terms of reference: To a student presently enrolled in a four year program leading to a BSc in chemistry. The Department of Chemistry scholarship committee will nominate a candidate for the scholarship on the basis of the applicant's potential for future work in research in chemistry related to the petrochemical industry and on the applicant's interest in such work.

#### **Paul and Helen Trussell Science Scholarship Fund**

Program code: N/A

Value: \$20000

Awarded: fall

Terms of reference: To a student entering their last two years of undergraduate study at a BC university or college. The applicant must be a Canadian citizen or Permanent Resident, and have completed secondary schooling in the Kootenay-Boundary area (School Districts No. 1-13 inclusive). To qualify, a candidate must be pursuing an undergraduate program leading to at least a master's or PhD degree in natural or applied sciences, such as agriculture,

engineering, forestry and fisheries. The award will cover the last two undergraduate years and the first two graduate years. Normally, a student must complete a minimum of 12 units of graded course work each term during tenure of the scholarship and maintain a 75% average. Apply to Science Council of British Columbia. [http://www.scbc.org/programs/scholarship\\_trussell.html](http://www.scbc.org/programs/scholarship_trussell.html)

#### **University Women's Club of Vancouver Women in Science Scholarship**

Program code: UESO-260

Value: \$1200

Awarded: fall

Terms of reference: To a female student enrolled in the Faculty of Science. The award is open to third or fourth year students majoring in science or applied science programs. A recommendation from the dean of science and/or the dean of applied science is required.

#### **Watson Wyatt Scholarship in Actuarial Science**

Program code: UESO-516

Value: \$2000

Awarded: spring

Terms of reference: To a student in an approved actuarial science program who has completed ACMA 320. Scholarship will be granted on the basis of academic performance. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair, Actuarial Science.

#### **Scholarships for Student Athletes**

##### **Howie Larke Scholarship in Sport Information**

Program code: UEAA-052

Value: \$55

Awarded: fall, spring, summer

Terms of reference: To a full time undergraduate student involved in sport information. The scholarship will be based on academic merit.

##### **Simon Fraser University Athletic Scholarships**

Program code: UUAO-102

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: Two scholarships valued at \$1,000 each are available to students who demonstrate outstanding and sustained athletic performance on an intercollegiate team. Students must be enrolled in nine units and have a minimum CGPA of 3.5 based on completion of 60 units at Simon Fraser University. Consideration will be given to exemplary leadership and contributions to the enhancement of the athletic specialty in which the student is involved.

##### **Simon Fraser University Track and Field Alumni Scholarship**

Program code: UEAA-042

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Based on academic merit and will be awarded to a student who is a member of the Simon Fraser University track and field team.

#### **Bursaries**

##### **Regulations**

The following regulations govern all university, private, and endowed bursaries over which the University has jurisdiction.

- Bursaries are a supplemental source of funding for students in high financial need. Students are expected to find their primary funding through other sources such as government student assistance (i.e. student loans and/or grants), part time work, savings, family, etc.

- Both undergraduate and graduate students, domestic (Canadian) and international, are eligible unless otherwise indicated.
- Students must have a demonstrated financial need.
- Undergraduate students must have a minimum CGPA of 2.00 to be eligible for bursaries. Graduate students who are enrolled in eligible master's or doctoral programs must have a minimum CGPA of 3.00 to be eligible for bursaries.
- Undergraduate students must be enrolled in a minimum of nine units of normal graded courses in the term of application, unless otherwise indicated. Challenge, audit, and credit free courses will not be considered. Students who enrol in fewer than nine units or subsequently drop below nine units may have their awards cancelled.
- Graduate students must be enrolled for residence credit in an approved full-time program. Students who do not enrol or subsequently change to on-leave status may have their awards cancelled.
- Domestic (Canadian) students must be approved for government student assistance from their home jurisdiction to be eligible. In exceptional circumstances, students may appeal for exemption.
- The student must apply using the Simon Fraser University online bursary/work-study application form via the student information system (<http://sis.sfu.ca>). It is the student's responsibility to meet applicable deadlines and supply all required documentation. Incomplete applications may be rejected.
- Unless otherwise stated, bursaries are tenable only at Simon Fraser University.
- Funds will be credited to the successful student's account with the University. Outstanding debts to the University will be deducted from the bursary funds before a cheque for the credit balance is issued.
- Bursaries are tenable only for the term indicated on the notice and may not be deferred. Students who do not enrol in the term for which the bursary is granted forfeit the award. To be considered for bursaries in future terms of enrolment, students must reapply.

## Bursaries for All Students

### Aboriginal Student Bursary Program

Program code: UUBO-516

Value: \$250

Awarded: fall, spring, summer

Terms of reference: Bursaries are available each term to entering and continuing aboriginal students attending Simon Fraser University who have a living connection to their own aboriginal community. Students shall submit documentation supporting their community connection with their bursary application. Awards will be made to students in good academic standing on the basis of demonstrated financial need. The Senate Awards Adjudication Committee will make the awards.

### Alumni Scholarship and Bursary Endowment Fund

Program code: UEBO-584

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To undergraduate and graduate students. The awards are based on financial need and satisfactory academic standing.

### David Armstrong Memorial Bursary

Program code: UEBO-699

Value: \$1000

Awarded: fall

Terms of reference: To an undergraduate student in the co-op program. The bursary is based on demonstrated financial need and satisfactory academic performance.

### Laura (Pat) Band and Richard W. Band Bursary for First Nations Students

Program code: UEBO-540

Value: \$400

Awarded: fall, spring, summer

Terms of reference: The bursary is granted in any term based on financial need and community service to a student who is a member of the Squamish, Fort Langley, or Cheam First Nations and who have demonstrated volunteer involvement in service to the University or the community at large. The bursary may be granted to graduate or undergraduate students in all disciplines and fields of study. The successful student will have completed a minimum of 30 credits and will have achieved a minimum cumulative GPA of 2.33. The application should include a discussion of the student's volunteer involvement in community activities and confirmation of the student's status in the Squamish, Fort Langley or Cheam First Nations.

### Ryan Beedie Annual Bursary

Program code: UPBO-713

Value: \$1000

Awarded: spring

Terms of reference: To full-time students in any faculty on the basis of demonstrated financial need and good academic standing.

### Bel-Par Industries Limited Bursary

Program code: UEBO-664

Value: \$700

Awarded: fall

Terms of reference: To an undergraduate student in any faculty. The bursary will be granted to a student who has maintained a satisfactory academic record and has financial need in the continuing pursuit of their studies. Preference will be given to students who are former employees of Bel-Par Industries or who are children or legal dependants of employees.

### Birks Family Foundation Bursary

Program code: UPBO-551

Value: \$500

Awarded: fall, spring, summer

Terms of reference: The Birks Family Foundation has established a plan of annual contributions to the student aid fund of recognized Canadian universities and colleges for the creation of these bursaries. The bursaries are awarded by the foundation on the recommendation of the university scholarship committee, are not restricted by faculty or year, and may be renewed. The number and amount of such awards may vary annually depending upon the funds available from the Foundation.

### Pat Blunden Undergraduate Bursaries

Program code: UEBO-741

Value: \$250

Awarded: fall, spring, summer

Terms of reference: Bursaries will be awarded to an undergraduate student in any faculty at Simon Fraser University.

### Louis Phillippe and L. Pierre Bonneau Memorial Bursary

Program code: UEBO-662

Value: \$850

Awarded: spring

Terms of reference: Bursaries will be awarded annually in the spring term to undergraduate students in any faculty who are in satisfactory academic standing and demonstrate financial need.

### The Honourable Angelo E. Branca and Mrs. Branca Bursary

Program code: UEBO-586

Value: \$800

Awarded: fall

Terms of reference: To students entering from secondary school. Applicants must demonstrate financial need and have satisfactory academic standing. Other bursaries valued approximately at

one term's tuition are available to students from any faculty, who have a minimum of 60 units at Simon Fraser University, have maintained satisfactory standing, and are in financial need. In honor of the 50th wedding anniversary of the Honorable Angelo E. Branca and Mrs. Branca, and on the occasion of his retirement from the bench, this bursary endowment fund has been established by the following donors, Confratellanza Italo-Canadese and friends Mr. J. Diamond, Mr. J. Segal, Mr. Ben Wosk.

### Burrard Charitable Foundation Bursary

Program code: UPBO-554

Value: \$750

Awarded: fall

Terms of reference: Available in the fall term to a disabled student who has satisfactory academic standing and is in financial need.

### Harvey and Dorothy Burt Bursary

Program code: UEBO-587

Value: \$600

Awarded: fall

Terms of reference: One or more bursaries will be awarded each year on the basis of financial need and demonstrated active involvement in the areas of conservation or environmental protection. Preference will be given to Canadian undergraduate students in their third or fourth year of studies.

### Emily Campbell Bursary Endowment Fund

Program code: UEBO-589

Value: \$125

Awarded: fall, spring, summer

Terms of reference: To students, staff and faculty parents who require some assistance with their daycare fees. Further information may be obtained from the Simon Fraser University childcare office. The Simon Fraser University Childcare Society and Simon Fraser University, through this fund, are committed to providing access to daycare services for children in the University community.

### Campus Community Bursary

Program code: UEBO-718

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Granted to undergraduate students in any faculty in any term based on demonstrated financial need and satisfactory academic performance.

### Canadian Federation of University Women – Coquitlam Bursary

Program code: UEBO-713

Value: \$750

Awarded: spring

Terms of reference: To a full-time mature undergraduate female student in any faculty who has returned to Simon Fraser University after a break in studies. Preference, where possible, will be given to a resident of School District #43 or a graduate of a School District #43 secondary school.

### Jim and Penny Cavers Bursary

Program code: UEBO-732

Value: \$2000

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance to students in any faculty and who have completed at least 60 units.

### Chapman Foundation Graduate and Undergraduate Bursaries

Program code: UEBO-744

Value: \$250

Awarded: spring

Terms of reference: The Chapman Foundation Graduate and Undergraduate Bursaries will be awarded to students in any faculty in good academic standing on the basis of demonstrated financial need.

**Mr. and Mrs. Leslie Chu Bursary**

Program code: UEBO-697

Value: \$1000

Awarded: fall

Terms of reference: To an undergraduate student in any faculty. Bursaries will be granted on the basis of demonstrated financial need, demonstrated service to the community, and a satisfactory academic performance.

**Confratellanza Italo Canadese Bursary**

Program code: UEBO-591

Value: \$400

Awarded: fall

Terms of reference: To undergraduate students with financial need and satisfactory academic standing. Preference will be given to Italo-Canadian students if they meet the criteria.

**Connell Lightbody Endowment Bursary**

Program code: UEBO-649

Value: \$1000

Awarded: fall

Terms of reference: To a full-time third year student planning to study law. Please provide a brief letter concerning your eligibility for this bursary. This bursary, established by the Connell Lightbody law firm, is in recognition of the outstanding contributions made by Dr. Arthur Fouks to both the legal community of Vancouver and the development of Simon Fraser University.

**Colin A. Conrad Bursary**

Program code: UEBO-728

Value: \$500

Awarded: summer

Terms of reference: To an undergraduate student in any faculty based on demonstrated financial need and satisfactory academic performance.

**CUPE Local 15 Vancouver Municipal, Education and Community Workers' Bursary**

Program code: UPBO-580

Value: \$1000

Awarded: fall

Terms of reference: To an applicant must be the sons, daughters, or legal dependants of union members. The member upon whom the applicant is a dependant must be a current member in good standing or retired member of CUPE Local 15 (excluding associate members). The member must have demonstrated a primary attachment to CUPE Local 15 by holding union membership through a minimum of six months employment for each of the two years prior to the date of enrolment and must be pursuing a field of study not in contradiction to the aims of the labor movement. The award selection will be made by Simon Fraser University in consultation with the executive. Award will be based primarily upon financial need and provided that academic performance is satisfactory. The applicant must be beginning or continuing full-time enrolment and must be capable of pursuing the course of study. An applicant for a bursary may only receive a bursary once every four years. Bursaries are to a maximum of \$1,000 of tuition only. One half of the tuition will be paid at the beginning of the school year and the second half will be paid at the second half of the school year. Bursary recipients are requested to submit proof of completion of program/year for which the bursary was provided.

**Alfred William Davidson Bursary**

Program code: UEBO-726

Value: \$500

Awarded: spring

Terms of reference: Granted to undergraduate students in any faculty based on demonstrated financial need and satisfactory academic performance. Preference will be given to students who contribute to the University or to the community through volunteer activities.

**Dr. Rosena Davison Bursary for France Field School**

Program code: UEBO-742

Value: \$800

Awarded: summer

Terms of reference: To full-time undergraduate students in good academic standing with an approved major in French who have been accepted to participate in a France field school. The bursary will be granted on the basis of demonstrated financial need.

**Father Della-Torre Bursary**

Program code: UEBO-592

Value: \$650

Awarded: fall

Terms of reference: Bursaries valued approximately at one term's tuition are available to students entering from secondary school. Applicants must demonstrate financial need and have satisfactory academic standing. Other bursaries valued approximately at one term's tuition are available to students in any faculty, who have a minimum of 60 units at Simon Fraser University, have maintained satisfactory academic standing and are in financial need.

**Gordon R. Diamond Bursary**

Program code: UEBO-535

Value: \$1000

Awarded: summer

Terms of reference: To undergraduate students in any faculty on the basis of demonstrated financial need and good academic standing.

**Dr. Jack Diamond Bursary**

Program code: UEBO-615

Value: \$1000

Awarded: summer

Terms of reference: Bursaries are available to students in any faculty with satisfactory academic performance and demonstrated financial need.

**Helen Egri Bursary for Students with Dependents**

Program code: UEBO-739

Value: \$250

Awarded: fall, spring, summer

Terms of reference: Bursaries will be awarded to students in any faculty on the basis of demonstrated financial need and satisfactory academic performance to students who financially support dependants.

**Fairfax Financial Holdings Limited Entrance Bursary**

Program code: UPBO-611

Value: \$2500

Awarded: fall, spring

Terms of reference: Eligible students must demonstrate financial need, be a Canadian citizen or have been granted permanent residence in Canada, have been accepted into (and must ultimately attend) the first year of a full time undergraduate degree program with a scheduled duration of not longer than five years, have achieved an average of at least 80% in their graduating year (which must have terminated no later than 18 months prior to the beginning of the academic year) at a Canadian secondary school or CEGEP, and not have previously received a Fairfax Award. Each recipients of an initial award is entitled to a renewal for four years for a total five years if the recipient continues to demonstrate financial need, intends to (and ultimately does) continue full time in the undergraduate degree program initially commenced and has not yet earned a degree therein, has achieved an average of at least B (3.0) in each previous academic year of the program and was in full time attendance in the program during the immediately preceding academic year.

**Erm Fiorillo – Hal Davis CKNW Orphan's Fund Bursary**

Program code: UEBO-651

Value: \$3000

Awarded: fall

Terms of reference: To an entering student from a secondary school in the Vancouver School District. In future the bursary may be offered to students graduating from secondary schools within the lower mainland. This award will be renewable for four academic years provided the recipient maintains a 2.00 grade point average and enrolls in nine units during the tenure of the award. This bursary is for a capable student whose family cannot provide financial assistance with the costs of post-secondary education because they are on welfare assistance. Students must be nominated by their secondary school principals and all applications will be evaluated by a school district selection committee, and the successful candidate will be recommended to the Simon Fraser University Senate Undergraduate Awards Adjudication Committee.

**Alex W. Fisher Bursary**

Program code: UEBO-596

Value: \$450

Awarded: spring

Terms of reference: To a hard-working and deserving male student in need of financial assistance. Donated by Alex W. Fisher.

**Lois M. Fisher Bursary**

Program code: UEBO-597

Value: \$450

Awarded: spring

Terms of reference: To a hard-working and deserving female student in need of financial assistance. Donated by Mr. Alex W. Fisher.

**William Gordon Memorial Bursary**

Program code: UEBO-640

Value: \$700

Awarded: fall

Terms of reference: To an undergraduate student in any faculty. The student must have a satisfactory academic standing and demonstrate financial need.

**Dr. Ben Gullison Bursary**

Program code: UPBO-640

Value: \$500

Awarded: fall

Terms of reference: To second, third or fourth year students in any undergraduate program. In recognition of Dr. Gullison's work, evidence of community service will be considered in making the award.

**Gutteridge Family Support Bursary**

Program code: UPBO-715

Value: \$1000

Awarded: summer

Terms of reference: Granted annually to a Simon Fraser University student with dependents, on the basis of demonstrated financial need and good academic standing.

**Hamber Foundation Bursary**

Program code: UPBO-559

Value: \$1000

Awarded: fall

Terms of reference: To women students with satisfactory academic standing and need for financial assistance.

**Madge Hogarth Bursaries**

Program code: UEBO-674

Value: \$325

Awarded: fall

Terms of reference: To undergraduate students in any faculty who are entering or in their fourth year of study and who have maintained satisfactory academic standing and demonstrated financial need.

**Horne Family Alumni Bursary**

Program code: UEBO-657

Value: \$1000

Awarded: fall, spring

Terms of reference: To a third or fourth year student who is a single parent, pursuing a degree at Simon Fraser University. The bursary is also based on satisfactory academic performance and demonstrated financial need.

#### **IODE Evelyn Price Memorial Bursary**

Program code: UEBO-641

Value: \$700

Awarded: fall

Terms of reference: To undergraduate students who are in the final year of a degree program. Applicants must be Canadian citizens, be maintaining a satisfactory academic standing and be in financial need.

#### **Ken and Su Jang Entrance Bursary**

Program code: UEBO-672

Value: \$1700

Awarded: fall

Terms of reference: To an entering student who demonstrates financial need and who has a satisfactory academic record prior to entrance to Simon Fraser University.

#### **Blayne and Sharon Johnson Bursary**

Program code: UEBO-523

Value: \$1100

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **Charles Chan Kent Golden Wedding Bursaries**

Program code: UPBO-563

Value: \$500

Awarded: fall

Terms of reference: To a student who is proceeding to a degree in any field, has successfully completed at least one year at Simon Fraser University, and needs financial assistance. Preferably the bursary will be made to a student of Chinese descent.

#### **Harold Lauer B'nai B'rith (Lions Gate Lodge 1716)**

Program code: UPBO-564

Value: \$750

Awarded: fall

Terms of reference: To undergraduate students, in any faculty, who have determined financial need and satisfactory academic standing.

#### **Donna Margaret Laws Undergraduate Bursary**

Program code: UEBO-546

Value: \$1000

Awarded: fall

Terms of reference: Given in the fall term to an undergraduate student in any faculty who is from outside the boundaries of the GVRD and on the basis of demonstrated financial need and satisfactory academic performance. Preference, when possible, will be given to female students.

#### **Dorothy and Alex MacDonald Bursary**

Program code: UEBO-678

Value: \$1000

Awarded: fall

Terms of reference: One or more bursaries will be awarded to undergraduate students in any faculty who have a satisfactory academic record and demonstrates financial need. A short letter outlining dedication to and involvement in the community should accompany the application.

#### **Sue MacDonald Memorial Bursary**

Program code: UEBO-654

Value: \$700

Awarded: fall, spring, summer

Terms of reference: Two or more bursaries will be awarded to undergraduate students in any faculty who have proven financial need and a satisfactory academic record.

#### **Dorothy May Martin Endowment Bursary**

Program code: UEBO-648

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: To students who are returning to full-time studies subsequent to a substantial interruption of their academic career after secondary school. Students must have a satisfactory academic standing and demonstrate financial need.

#### **Dr. Carol Matusicky Family Studies Bursary**

Program code: UEBO-708

Value: \$500

Awarded: spring

Terms of reference: The bursary is given on the basis of demonstrated financial need and satisfactory academic performance. Preference will be given to a student in the certificate in family studies program or, failing that, to a student in any faculty whose course work will prepare them to work with children, youth and families after university.

#### **John Michael McLarty Bursary**

Program code: UEBO-666

Value: \$1000

Awarded: fall

Terms of reference: To an undergraduate student in any faculty. The award will be granted to a student who has a satisfactory academic record and who is experiencing financial need in the continuing pursuit of studies. Preference will be given to Canadian students.

#### **Jo-Ann Mychaluk Bursary**

Program code: UEBO-602

Value: \$750

Awarded: fall

Terms of reference: To students with satisfactory academic standing. These bursaries are available to students who are, or have been, residents of the Chilcotin or Cariboo regions of BC. This fund has been established in memory of Jo-Ann Mychaluk who worked in the Centre for Distance Education.

#### **Madeleine A. Nelson Bursary**

Program code: UEBO-735

Value: \$750

Awarded: spring

Terms of reference: Granted annually to a graduate or undergraduate student who has demonstrated financial need and satisfactory academic performance. Preference will be given to mature female students beginning or returning to university.

#### **Nitikman/Chan Bursary**

Program code: UEBO-737

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: The bursary will substantially pay tuition and fees for two terms and will be disbursed over two terms. Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in any faculty or discipline. The recipient will be a single parent with preference given to entering students.

#### **Evelyn J. Oliver Bursary**

Program code: UEBO-682

Value: \$500

Awarded: fall, spring

Terms of reference: To undergraduate students who are single parents. Bursaries will be granted to students holding satisfactory academic records and providing evidence of financial need in the continuing pursuit of their undergraduate studies.

#### **Stephen Palmu Memorial Bursary**

Program code: UPBO-566

Value: \$100

Awarded: fall, spring

Terms of reference: The award will be given with initial preference to native indian students from anywhere in the province of BC, who are pursuing courses of study leading to a bachelor's degree in any department at Simon Fraser University. The award

will be made primarily on the basis of need, but in the case of several applicants having equal need, scholastic achievement shall be the deciding factor. Bursary established by Mrs. Mamie E. Palmu.

#### **Margaret Anne Paterson Bursary**

Program code: UEBO-527

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To an undergraduate student in good academic standing studying in any faculty. Bursaries will be granted on the basis of demonstrated financial need. Preference will be given to an employee or direct family member of an employee of a Lower Mainland Boston Pizza restaurant or Boston Pizza International. A letter from the employer must be provided in order to support the employment claim.

#### **Permanent Bursary Endowment Plan**

Program code: N/A

Value: \$200

Awarded: fall, spring, summer

Terms of reference: Applications must be submitted on the Simon Fraser University bursary application form under the heading "Permanent Bursary Endowment Plan." Permanent bursary endowments provide annual bursaries in perpetuity from the earned income, and have been established by the following:

Belkin Packaging Limited Permanent Endowment Fund  
Gretta Bowmer Memorial  
Estate of Hans Christiansen  
Mark and Phae Collins Fund (Vancouver Foundation)  
Ted Cohen  
Dr. Jack Diamond  
Downs/Archambault  
Drop-in Centre Permanent Endowment Bursary  
David A. Freeman  
Ellen Mary Greenaway  
John R. Hecht  
Stephen Hinchcliff Memorial  
A. Koch (Bella Koch Memorial)  
Dr. W. Koerner  
I.L. Kostman  
Mrs. Katherine Leshgold  
Samuel D. Leshgold  
Dr. R.A. Palmer  
Mr. and Mrs. N.L. Rothstein  
M.M. Waterman  
In Memory of Mrs. M.M. Waterman  
Ben Wosk  
Mr. and Mrs. Ben Wosk 40th Wedding Anniversary

#### **Jean Pudney Bursaries**

Program code: UEBO-750

Value: \$500

Awarded: fall

Terms of reference: To graduate or undergraduate students in good academic standing on the basis of demonstrated financial need.

#### **Office of the Registrar Bursary**

Program code: UEBO-665

Value: \$500

Awarded: fall

Terms of reference: The Office of the Registrar Bursary provides one or more annual bursaries from a portion of the earned interest on the endowment. The award(s) will be given in the fall term to a disabled graduate or undergraduate student in any faculty. The bursaries will be granted to disabled students holding satisfactory academic records and experiencing financial need in the continuing pursuit of studies.

#### **Renaissance Community Service Bursary**

Program code: UEBO-751

Value: \$1000

Awarded: summer



Terms of reference: Granted on the basis of demonstrated financial need and leadership and/or service at Simon Fraser University to a student in any faculty. The student's leadership or service may be to the University community or by representing the University to the community at large. Applications packages must include a resume outlining the candidate's leadership activities and volunteer service as well as letter(s) of recommendation confirming these activities.

#### **Rotary Club of Vancouver Sunrise Entrance Bursary**

Program code: UEBO-706

Value: \$1000

Awarded: fall

Terms of reference: Based on financial need, to a student entering Simon Fraser University. Preference will be given to a student who resides in the City of Vancouver. The recipient of the award may be invited to make a presentation at a meeting of the Rotary Club of Vancouver Sunrise.

#### **Saskexpo '86 Bursary**

Program code: UPBO-636

Value: \$3000

Awarded: fall

Terms of reference: Saskatchewan secondary school student entering either Simon Fraser University in British Columbia or The University of Saskatchewan at Saskatoon in Saskatchewan. The award will alternate between Simon Fraser University and the University of Saskatchewan. For 1988-1989 (the first year of the award), the bursary was for a student attending Simon Fraser University. Selection will be made on the basis of financial need, the student's demonstrated contribution to his/her school and community, and leadership potential. Consideration may also be given to the student's academic record. Applications will be submitted to the Simon Fraser University Senate Scholarships, Awards and Bursaries Committee, in care of the director of Financial Aid and Awards at Simon Fraser University for students who plan to attend Simon Fraser University; and to the University of Saskatchewan Scholarships, Awards and Bursaries Committee, in care of the registrar, for students planning to attend The University of Saskatchewan.

#### **Sceptre Investment Counsel Ltd Bursary**

Program code: UEBO-701

Value: \$2000

Awarded: fall

Terms of reference: To an entering undergraduate student in the Faculty of Science beginning in the 1995 fall term on a rotational basis in subsequent years to the Faculties of Applied Sciences (1996), Arts (1997), Business Administration (1998), and Education (1999). The bursary will be awarded on the basis of demonstrated financial need and satisfactory academic performance.

#### **Sceptre Investment Counsel**

##### **Administrative/Union Pension Plan Bursary**

Program code: UEBO-721

Value: \$1500

Awarded: fall

Terms of reference: Granted to a student in any faculty on the basis of demonstrated financial need and satisfactory academic performance.

#### **Mrs. Rosalie Segal Endowment Fund for Students With Special Needs**

Program code: UEBO-604

Value: \$500

Awarded: fall, spring, summer

Terms of reference: This fund has been established to provide bursaries to physically challenged students. Up to three bursaries will be awarded on the basis of financial need. Adjudication will occur in consultation with the physically challenged students' co-ordinator.

#### **Stanley Sievenpiper Bursary**

Program code: UEBO-605

Value: \$500

Awarded: fall, spring

Terms of reference: One award in the fall and one in the spring on the basis of financial need. Preference will be given to third and fourth year students. This fund has been established in memory of Stanley Sievenpiper.

#### **Simon Fraser Student Society Bursary**

Program code: UPBO-571

Value: \$800

Awarded: spring

Terms of reference: To students with special or emergency financial need with preference to those students who may not otherwise be able to attend Simon Fraser University. Applications are open to part or full time, beginning or continuing students as well as international students.

#### **Simon Fraser University 10th Anniversary Endowment Bursary**

Program code: UEBO-504

Value: \$500

Awarded: fall, spring, summer

Terms of reference: This fund has been established to provide bursaries for students in financial need who maintain a GPA of 2.00.

#### **Simon Fraser University Bursary Endowment Fund**

Program code: UEBO-502

Value: \$500

Awarded: fall, spring, summer

Terms of reference: All undergraduates in financial need are eligible to apply for these bursaries. A minimum CGPA of 2.00 is required.

#### **Simon Fraser University Daycare Bursaries**

Program code: UUBO-700

Value: \$100

Awarded: fall, spring, summer

Terms of reference: Applications for daycare bursaries are available at the Daycare Centre. Eligible students may qualify for a bursary provided that financial need can be demonstrated by a completed Canada Student Loan assessment or an open bursary assessment. Daycare bursaries are available to both graduate and undergraduate students.

#### **SFU Field School Bursary**

Program code: UUBO-510

Value: variable

Awarded: fall, spring, summer

Terms of reference: Bursaries will be available each term to Simon Fraser University students who are participating in a Simon Fraser University field school. Awards will be made to students in good academic standing on the basis of demonstrated financial need.

#### **SFU Foreign Exchange Bursary**

Program code: UUBO-512

Value: variable

Awarded: fall, spring, summer

Terms of reference: Bursaries will be available each term to Simon Fraser University students who are participating in formal exchange programs organized by Simon Fraser University. Awards will be made to students in good academic standing on the basis of demonstrated financial need.

#### **SFU International Co-operative Education Bursary**

Program code: UUBO-514

Value: variable

Awarded: fall, spring, summer

Terms of reference: Bursaries will be granted in any term to students in good academic standing who are accepted to the Co-operative Education Program and are enrolled in a work term outside of Canada. To be eligible students must be placed with a co-operative education employer and be in good standing with the

co-op program. The award will be made on the basis of demonstrated financial need.

#### **SFU International Students' Bursary Fund**

Program code: UUBO-600

Value: \$500

Awarded: fall, spring, summer

Terms of reference: This fund has been established to assist undergraduate visa students who have critical financial need. Students applying for this bursary must be enrolled in a minimum of nine units and have satisfactory academic standing.

#### **Simon Fraser University International Students' Emergency Assistance Fund**

Program code: UPBO-637

Value: \$500

Awarded: fall, spring, summer

Terms of reference: This fund has been established primarily to assist undergraduate visa students who have critical financial need. Students applying for this bursary must be enrolled in a minimum of nine units and have satisfactory academic standing.

#### **Simon Fraser University Open Bursaries**

Program code: UUBO-500

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Must be enrolled in a minimum of nine units and have satisfactory academic standing.

#### **SFU Punjabi Students Association Bursary**

Program code: UEBO-521

Value: \$450

Awarded: summer

Terms of reference: The SFU Punjabi Students Association Bursary valued at a portion of the income earned on the endowment, will be awarded annually in any term. Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to undergraduate students in any faculty.

#### **Jennifer Allen Simons Bursary**

Program code: UEBO-669

Value: \$1000

Awarded: fall

Terms of reference: To an undergraduate or graduate woman student in any faculty. The bursary will be granted in the fall term to a student who is a single parent supporting a child, and who is in financial need and who has satisfactory academic performance. Applicants must have completed one term at Simon Fraser University as a full-time student.

#### **B and B Sivertz Bursary**

Program code: UEBO-656

Value: \$1000

Awarded: fall

Terms of reference: To undergraduate students who demonstrate financial need and satisfactory academic performance, and who have completed 30 units at Simon Fraser University.

#### **Harry and Dora Annie Smee Bursary**

Program code: UEBO-606

Value: \$800

Awarded: fall

Terms of reference: Up to three bursaries will be awarded to students in any faculty who have completed at least 30 units at Simon Fraser University. The awards will be based on financial need and satisfactory academic standing. Preference will be given to female students.

#### **Merle L. Smith Bursary**

Program code: UPBO-572

Value: \$525

Awarded: spring

Terms of reference: A physically challenged student in any faculty who is beyond first year studies. Initial preference will be given to wheelchair users.

#### **Squamish Nation Bursary**

Program code: UEBO-738

Value: \$500

Awarded: fall, spring, summer

Terms of reference: The bursary, based on financial need and community service, is granted to a student who is a member of the Squamish Nation. The bursary may be granted to graduate or undergraduate students in all disciplines. The successful student will have completed a minimum of 24 units and will have achieved a minimum CGPA of 2.00. The application should include a discussion of the student's involvement in Simon Fraser University or Squamish Nation community activities and confirmation of the student's status with the Squamish Nation.

#### **Dorothy Sullivan Bursary**

Program code: UEBO-690

Value: \$800

Awarded: fall, spring, summer

Terms of reference: To an undergraduate student in any faculty who has been a federal or provincial prisoner. Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **TCG International Undergraduate Bursaries**

Program code: UEBO-644

Value: \$1500

Awarded: fall

Terms of reference: The bursaries will be granted to undergraduate students in any faculty with satisfactory academic standing and experiencing financial need in the continuing pursuit of their studies. Preference for one of the bursaries will be given to applicants who are sons, daughters, or legal dependants of employees of TCG International Inc. However, where no such candidate is identified, disbursement of the awards will be at the discretion of Simon Fraser University.

#### **Trident Enrichment Society Bursary**

Program code: UEBO-696

Value: \$600

Awarded: fall

Terms of reference: To an entering or first year undergraduate student in any faculty. The bursary will be awarded to a student with a satisfactory academic record and demonstrated financial need in the continuing pursuit of their studies. The application must be accompanied by a letter outlining the applicant's participation in community service.

#### **TSSU Member Child Care Bursary**

Program code: UUBO-550

Value: variable

Awarded: fall, spring, summer

Terms of reference: TSSU employees are eligible to apply to the TSSU Member Child Care Bursary for each term in which they hold an appointment and are enrolled as students at Simon Fraser University and in which they receive child care services from a paid child care provider. All applications are subject to verification. The applicant must identify him/herself as an employee in the bargaining unit on the bursary application.

#### **University Women's Club of Coquitlam Bursary**

Program code: UPBO-573

Value: \$1000

Awarded: summer

Terms of reference: To a full-time undergraduate female student who has returned to her studies at Simon Fraser University. Preference, where possible, is to be given to a resident of School District #43 or a graduate of a School District #43 secondary school.

#### **University Women's Club of Vancouver Bursary**

Program code: UPBO-575

Value: \$985

Awarded: spring

Terms of reference: To a female student in any faculty enrolled in any program of study leading to a degree.

The basis of the award is demonstration of financial need and satisfactory academic standing.

#### **Vancouver East Rotary Entrance Bursary**

Program code: UEBO-743

Value: \$250

Awarded: fall

Terms of reference: To an entering student on the basis of financial need. Preference will be given to a student graduating from Killarney, Windemere or Gladstone Secondary Schools in Vancouver who are entering an undergraduate program showing interest in pursuing a career in K-12 education. If no suitable candidates are identified, the bursary will be made available to students from Killarney, Windemere or Gladstone Secondary Schools in Vancouver entering any undergraduate program.

#### **Vancouver Foundation First Nations Bursary**

Program code: UPBO-697

Value: \$500

Awarded: fall

Terms of reference: Bursaries will be available annually in the fall term to undergraduate or graduate Aboriginal students (First Nations, status or non-status, Metis or Inuit) who permanently reside in British Columbia. Awards will be granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **Roger Ward and Avora Hamilton Award for Students With a Learning Disability**

Program code: UEBO-536

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: To a full-time undergraduate student(s) with a learning disability who is registered for services at the Centre for Students with Disabilities and is experiencing financial need. The award will be granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **Western Businesswomen's Association Bursary**

Program code: UEBO-705

Value: \$800

Awarded: fall

Terms of reference: To a full or part-time student who is either entering the University for the first time or returning after an absence. Preference will be given to a mature female student. The bursary will be based on satisfactory academic performance and demonstrated financial need.

#### **Morris J. and Dena Wosk Bursary**

Program code: UEBO-712

Value: \$1000

Awarded: spring

Terms of reference: To undergraduate students in any faculty, on the basis of demonstrated financial need and satisfactory academic performance.

#### **Fred & Maureen Wright Bursary**

Program code: UEBO-710

Value: \$1300

Awarded: spring

Terms of reference: To undergraduate students in any faculty on the basis of demonstrated financial need and satisfactory academic performance.

#### **John and Isabel Young Bursary**

Program code: UEBO-516

Value: \$1000

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **Lisa and Christopher Yun "Pay It Forward" Annual Bursary**

Program code: UPBO-716

Value: \$1000

Awarded: fall

Terms of reference: Available annually to full-time students in any faculty. Eligible students must demonstrate financial need and be in good academic standing. Preference will be given to students who are single parents with dependent(s).

#### **Winfried Zacherl Bursary for Single Parents**

Program code: UEBO-747

Value: \$1250

Awarded: fall, spring, summer

Terms of reference: To an undergraduate student who is also a single parent. Awards will be granted to students in good academic standing on the basis of demonstrated financial need.

#### **Zioulas Family Annual Bursary**

Program code: UPBO-714

Value: \$500

Awarded: spring

Terms of reference: Granted to full-time students in any faculty on the basis of demonstrated financial need and good academic standing. Preference will be given to students who are parents of dependent children.

### **Bursaries for Applied Sciences Students**

#### **Canadian Federation of University Women - North Vancouver Bursary**

Program code: UPBO-574

Value: \$1000

Awarded: spring

Terms of reference: To a female undergraduate student enrolled in the second, third, or fourth year in any math or science faculty or professional school. The recipient should be in financial need and in satisfactory academic standing. The recipient must be a resident of North Vancouver or a graduate of a North Vancouver secondary school (School District #44).

#### **Hugh Clark Memorial Bursary in Engineering Science**

Program code: UEBO-694

Value: \$600

Awarded: fall

Terms of reference: To an undergraduate student in the School of Engineering Science. The award will be granted to a student holding a satisfactory academic record and experiencing financial need in the continuing pursuit of his/her studies.

#### **Cogent ChipWare Undergraduate Bursary in Engineering Science**

Program code: UEBO-754

Value: \$1000

Awarded: fall

Terms of reference: Awarded to full-time students registered in the engineering science program, on the basis of demonstrated financial need and good academic standing.

#### **Engineers' Wives' Association Bursary**

Program code: UEBO-525

Value: \$500

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance to undergraduate students in the School of Engineering Science. The applicant should be a Canadian citizen or a permanent resident of Canada.

#### **Douglas M. Gregg Bursary in Computing Science**

Program code: UPBO-711

Value: \$500

Awarded: spring

Terms of reference: To a student majoring in computing science who has demonstrated financial need and satisfactory academic performance.

#### **IODE Burnaby Municipal Chapter Bursary**

Program code: UEBO-658

Value: \$750

Awarded: fall, spring

Terms of reference: To third or fourth year students majoring in science or applied sciences. Students must be Canadian citizens and graduates of Burnaby Senior Secondary School. Financial need and satisfactory academic standing is required.

#### **JimMar Bursary in Engineering**

Program code: UEBO-538

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be granted to undergraduate students in the Faculty of Applied Sciences majoring in engineering. The bursary is granted in any term based on demonstrated financial need and satisfactory academic performance.

#### **Ralph Kerr Memorial Bursary**

Program code: UEBO-599

Value: \$1000

Awarded: fall

Terms of reference: To undergraduate students. Preference will be given to students who are in their third or fourth year of studies in the physics or engineering programs. This bursary fund has been established in memory of Ralph Kerr, a charter member of Simon Fraser University and a former employee of the Department of Physics.

#### **Olga and Richard Murray Bursary in Applied Sciences**

Program code: UEBO-725

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: Granted to graduate or undergraduate students in the Faculty of Applied Sciences on the basis of demonstrated financial need and satisfactory academic performance. To the extent feasible, preference will be given to a student, or the spouse or child of a person, who is a member of the Telecommunication Workers Union or of Van-Tel Credit Union.

#### **Pacific National Foundation Endowment Bursary**

Program code: UEBO-655

Value: \$2000

Awarded: fall

Terms of reference: To a single parent, undergraduate student in the Faculty of Business Administration, Faculty of Education, Faculty of Applied Sciences or the Faculty of Science. The bursary will be granted to a student wishing to upgrade their professional skills. The student should have satisfactory academic standing and a demonstrated financial need. A letter expressing job goals and direction should accompany the application form.

#### **Kazuya Shinyashiki Memorial Bursary in Computing Science**

Program code: UEBO-515

Value: \$1000

Awarded: summer

Terms of reference: To an undergraduate student in computing science with financial need.

#### **Sierra Systems Bursary in Computing Science**

Program code: UEBO-663

Value: \$2500

Awarded: fall

Terms of reference: To third or fourth year students in the School of Computing Science. Applicants must have a satisfactory academic standing and financial need. One award will be given to a student from the Greater Vancouver Regional District and the other to a student from outside the Greater Vancouver Regional District.

#### **Victor J. Sundberg Memorial Bursary in Engineering Science**

Program code: UEBO-681

Value: \$1000

Awarded: fall

Terms of reference: To an undergraduate student in any faculty. Whenever possible, preference will be given to a student majoring in engineering science in the Faculty of Applied Sciences. Applicants must have a satisfactory academic record and be in financial need in the pursuit of their academic studies.

As well, special consideration will be given to community involvement and citizenship, evidence thereof to be provided in an accompanying letter or supporting documentation.

#### **Irene May Surbey Bursary**

Program code: UEBO-723

Value: \$900

Awarded: spring

Terms of reference: Granted to undergraduate students in the Faculty of Science or in the Faculty of Applied Sciences. The bursary is granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **VTech Co-op Bursary in Engineering Science**

Program code: UEBO-749

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: Awarded annually in any term to an undergraduate student in the School of Engineering Science, in their second, third, or fourth year who has completed at least one co-op term. The bursaries will be granted to students in good academic standing on the basis of demonstrated financial need in the continuing pursuit of their studies.

#### **Bursaries for Arts and Social Sciences Students**

##### **BOMA Undergraduate Bursary in Urban Studies**

Program code: UEBO-715

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance. Preference will be given to a student in the certificate in urban studies program, or failing that, to a student in any faculty whose course work involves some aspect of real estate studies as their primary focus.

##### **Chien's Cultural Foundation Bursary**

Program code: UEBO-707

Value: \$600

Awarded: fall

Terms of reference: To an undergraduate student in the Faculty of Business Administration, or in the Faculty of Arts, preferably in political science. The bursary will be given to a student in good academic standing who is experiencing financial need.

##### **Dr. Ed Colhoun Memorial Bursary**

Program code: UEBO-673

Value: \$225

Awarded: fall

Terms of reference: To an undergraduate student in Spanish who is holding a satisfactory academic record and who demonstrates financial need.

##### **Kenneth Conibear Bursary in English**

Program code: UEBO-724

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Granted to undergraduate students majoring in English. The bursary is granted in any term based on demonstrated financial need and satisfactory academic performance.

##### **Laurence Mervyn Cox Bursary in English**

Program code: UEBO-541

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Awarded on the basis of demonstrated financial need and satisfactory academic performance to undergraduate students majoring in English. Preference will be given to students accepted to the honors program in the Department of English and to Canadian citizens or permanent residents of Canada.

#### **School of Criminology Alumni Bursaries**

Program code: UEBO-530

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the School of Criminology.

#### **CUPE LOCAL 3338 Bursary In Labour Studies**

Program code: UPBO-703

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Bursaries are offered based on demonstrated financial need and satisfactory academic performance to students who are approved in the labor studies certificate or minor program at Simon Fraser University.

#### **Charles Drugan & Rose Anne Doonan Bursary in Labour History**

Program code: UEBO-542

Value: \$250

Awarded: fall, spring, summer

Terms of reference: The bursary will be granted to a graduate or undergraduate student pursuing research in labor history in the Faculty of Arts. Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **English Faculty Honours Bursary**

Program code: UEBO-730

Value: \$500

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance, to an undergraduate student in the honours English program. If there is no suitable candidate from the honours English program in a given year, the bursary may be awarded to an undergraduate student majoring in English.

#### **Aird Dundas Flavell Memorial Bursary**

Program code: UEBO-659

Value: \$1200

Awarded: fall

Terms of reference: To a student who has completed at least 15 units at Simon Fraser University with a satisfactory academic standing and whose course of study is in the following areas: political science, economics and/or business administration.

#### **Robin Hoodspith Memorial Bursary in English**

Program code: UPBO-609

Value: \$500

Awarded: spring, summer

Terms of reference: To an undergraduate student with an approved English major who is experiencing financial need.

#### **ICBC/Brian Jones Memorial Bursary in Criminology**

Program code: UEBO-524

Value: \$750

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance to undergraduate students in the School of Criminology.

#### **IODE Verna Allen Memorial Bursary**

Program code: UPBO-561

Value: \$275

Awarded: spring

Terms of reference: To an undergraduate student in second or third year within the Faculty of Arts.

Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance. The recipient may be a Canadian citizen or permanent resident of Canada with preference given to individuals who have prior schooling (or partially educated) in Canada.

#### **Florence Godwin IODE Bursary in Criminology**

Program code: UEBO-650

Value: \$500

Awarded: fall

Terms of reference: To an undergraduate student majoring in criminology, on the basis of demonstrated financial need and satisfactory academic performance. The recipient may be a Canadian citizen or permanent resident of Canada.

#### **Audrey E. Jang Memorial Bursary in Arts and Social Sciences**

Program code: UEBO-740

Value: \$1000

Awarded: fall, spring

Terms of reference: Granted based on demonstrated financial need to an undergraduate student(s) in any year who has/have entered Simon Fraser University from a United World College. Preference is given to students in the Faculty of Arts and Social Sciences.

#### **Valerie Ann Kilby Memorial Bursary**

Program code: UEBO-685

Value: \$700

Awarded: fall

Terms of reference: To an upper level undergraduate student majoring in psychology. Preference will be given to a student who graduated from Centennial Secondary School in Coquitlam. The bursary will also be based on financial need and satisfactory academic standing in the continuing pursuit of studies.

#### **Lantic Inc. Bursaries**

Program code: UPBO-553

Value: \$1000

Awarded: fall

Terms of reference: To undergraduate students, who are in their third or fourth year of study at Simon Fraser University. Two bursaries are available to students majoring in business administration, and three bursaries to students majoring in economics, or the sciences, including mathematics and statistics.

#### **Keith Gilbert Loughlin Bursary in Gerontology**

Program code: UEBO-702

Value: \$700

Awarded: fall

Terms of reference: To a graduate student enrolled in the master of gerontology program, or to an undergraduate student enrolled in the gerontology program, a post baccalaureate diploma program. The bursary will be granted to a student demonstrating financial need and in satisfactory academic standing. Preference will be given to a student specializing in quality of life issues in intermediate care facilities for seniors. Applicants should submit with their application, a letter outlining specialization or area of interest in the gerontology field. A departmental nomination is to be submitted along with the application form.

#### **Grace Woodsworth MacInnis Bursary**

Program code: UEBO-704

Value: \$800

Awarded: spring

Terms of reference: To an undergraduate student who either has an approved minor in humanities, or has an approved major in women's studies or political science. The recipient should have demonstrated financial need and a satisfactory academic standing; preference is given to a woman student.

#### **MATCH International Centre Bursaries in Honour of Rosemary Brown**

Program code: UPBO-607

Value: \$625

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance to full-time undergraduate or graduate students in the Department of Women's Studies.

#### **McCavour Family Bursary in Criminology**

Program code: UEBO-691

Value: \$600

Awarded: fall

Terms of reference: To undergraduate students in criminology who are single parents. Preference will be given to applicants who are sons, daughters or legal dependants of members of the Firemen's Benefit Association of Vancouver, BC. However, where no such candidate is identified, the award may be disbursed to other eligible students. The bursary will be granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **Lydia McCombie Memorial Bursary**

Program code: UEBO-693

Value: \$1200

Awarded: fall

Terms of reference: To an undergraduate student in the Faculty of Arts majoring in English. Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **Bruce McKelvie Endowment Bursary**

Program code: UEBO-601

Value: \$400

Awarded: fall, spring

Terms of reference: To a student on the basis of financial need and satisfactory academic standing. To qualify, students must have completed at least two years of study at Simon Fraser University and be focusing their studies on early BC history, namely 18th century forward. The bursary has been established by the Native Sons of British Columbia, Post #2.

#### **Robin Mercer Memorial Bursary in Archaeology**

Program code: UEBO-675

Value: \$700

Awarded: fall

Terms of reference: To an undergraduate student who is majoring in archaeology and who has a satisfactory academic record and in financial need. This bursary was established in memory of Robin Mercer, a former alumnus of Simon Fraser University in the Faculty of Arts.

#### **Dr. Grazia Merler Bursary in French**

Program code: UEBO-714

Value: \$500

Awarded: spring

Terms of reference: To a student in French on the basis of demonstrated financial need and satisfactory academic performance.

#### **Margaret A. Mitchell Bursary in Political Science**

Program code: UEBO-687

Value: \$2500

Awarded: fall

Terms of reference: To an undergraduate female student in second, third or fourth year of studies who is majoring in political science. The award will be granted to a student holding a satisfactory academic record and demonstrated financial need. When possible, preference will be given to a candidate living in the east end of Vancouver or in Burnaby.

#### **Margaret A. Mitchell Bursary in Women's Studies**

Program code: UEBO-688

Value: \$2500

Awarded: fall

Terms of reference: To an undergraduate female student in second, third or fourth year who is majoring

in women's studies. The award will be granted to a student holding a satisfactory academic record and demonstrated financial need. When possible, preference will be given to a candidate living in the east end of Vancouver or in Burnaby.

#### **Kelly O'Hagan Memorial Bursary**

Program code: UEBO-683

Value: \$1250

Awarded: fall, spring, summer

Terms of reference: Granted annually on the basis of financial need and satisfactory academic standing in any term to students in any faculty pursuing an exchange or field school in Latin America. The award will be made by the Senate Undergraduate Awards Adjudication Committee.

#### **Dr. Margaret Ormsby Bursary in History**

Program code: UEBO-719

Value: \$850

Awarded: fall

Terms of reference: Granted to undergraduate students in the Department of History based on demonstrated financial need and satisfactory academic performance.

#### **George and Muriel Rogers Bursary in the Faculty of Arts**

Program code: UEBO-534

Value: \$950

Awarded: summer

Terms of reference: To an entering or returning undergraduate student in the Faculty of Arts. Preference will be given to a female student who is continuing her education after an absence of several years. Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **Donald H.M. Ross Faculty of Arts Bursary**

Program code: UEBO-692

Value: \$1000

Awarded: fall

Terms of reference: To a third or fourth year undergraduate student in the Faculty of Arts. The bursary will be granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **Paul and Ethel Seifner Linguistics Bursaries**

Program code: UEBO-661

Value: \$1000

Awarded: fall, spring

Terms of reference: To undergraduate students pursuing a linguistics program who have satisfactory academic standing, demonstrated financial need, and have completed 15 units at Simon Fraser University.

#### **Frederick Shen Bursaries in Business Administration and Economics**

Program code: UPBO-704

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be available annually to students with an approved major in business administration or economics, on the basis of demonstrated financial need and satisfactory academic performance.

#### **The UniverCity Annual Bursary in Community Planning**

Program code: UPBO-707

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Granted to an upper level geography student on the basis of demonstrated financial need and satisfactory academic performance.

## Bursaries for Business Administration Students

### 3M Canada Company Bursary in Business Administration

Program code: UPBO-601

Value: \$1000

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance to undergraduate students in the Faculty of Business Administration.

### BC Bond Dealers Association Bursary

Program code: UEBO-689

Value: \$550

Awarded: fall

Terms of reference: To an undergraduate student in the Faculty of Business Administration with a concentration in finance. The bursary will be granted on the basis of demonstrated financial need and a satisfactory academic record.

### Keith and Betty Beedie Foundation Bursary in Business Administration

Program code: UEBO-698

Value: \$1000

Awarded: fall

Terms of reference: To an undergraduate third or fourth year student in the Faculty of Business Administration with a concentration in either finance or accounting. Preference will be given to a graduate of either a Burnaby secondary school or Magee Secondary School. The bursary will be granted on the basis of satisfactory academic performance.

### Faculty of Business Administration Alumni Bursaries

Program code: UEBO-531

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the Faculty of Business Administration.

### Chien's Cultural Foundation Bursary

Program code: UEBO-707

Value: \$600

Awarded: fall

Terms of reference: To an undergraduate student in the Faculty of Business Administration, or in the Faculty of Arts, preferably in political science. The bursary will be given to a student in good academic standing who is experiencing financial need.

### Connor, Clark & Lunn Bursary

Program code: UPBO-684

Value: \$1000

Awarded: fall

Terms of reference: To undergraduate student in the faculty of Business Administration with a concentration in International Business who is in good academic standing and experiencing financial need.

### Maurice S. Dodge Bursary

Program code: UEBO-720

Value: \$1250

Awarded: fall

Terms of reference: Given to a third or fourth year student majoring in business administration with an accounting or finance concentration. The bursary will be granted to a student in good academic standing who is in financial need.

### Executive Women International Bursary

Program code: UEBO-684

Value: \$550

Awarded: fall

Terms of reference: To an undergraduate female student enrolled in the Faculty of Business Administration in the second, third or fourth year of studies and who has a satisfactory academic record and financial need.

### Aird Dundas Flavelle Memorial Bursary

Program code: UEBO-659

Value: \$1200

Awarded: fall

Terms of reference: To a student who has completed at least 15 units at Simon Fraser University with a satisfactory academic standing and whose course of study is in the following areas: political science, economics and/or business administration.

### Chu On Fok and Wai Yuk Fok Foundation Bursary

Program code: UEBO-545

Value: \$250

Awarded: summer

Terms of reference: Granted in any term to a student in any year with an approved business administration major who is experiencing financial need and demonstrates satisfactory academic performance. Where possible, preference may be given to single parent students.

### Henderson Development Ltd. Bursary

Program code: UPBO-688

Value: \$1000

Awarded: fall

Terms of reference: To an undergraduate student in third or fourth year in business administration. The bursary will be awarded to a student in satisfactory academic standing and demonstrated financial need.

### Dr. Cal Hoyt Bursary in Business Administration

Program code: UEBO-722

Value: \$600

Awarded: spring

Terms of reference: Granted to undergraduate students in the Faculty of Business Administration based on demonstrated financial need and satisfactory academic performance.

### Ivanhoe Cambridge Bursary

Program code: UEBO-653

Value: \$900

Awarded: fall

Terms of reference: To full-time undergraduate students enrolled in the Faculty of Business Administration. The awards are based on financial need and satisfactory academic standing.

### Lantic Inc. Bursaries

Program code: UPBO-553

Value: \$1000

Awarded: fall

Terms of reference: To undergraduate students, who are in their third or fourth year of study at Simon Fraser University. Two bursaries are available to students majoring in business administration, and three bursaries to students majoring in economics, or the sciences, including mathematics and statistics.

### R.J. McMaster Memorial Bursary (Credit Union Foundation of B.C.)

Program code: UPBO-634

Value: \$500

Awarded: spring

Terms of reference: To a student majoring in business administration who is entering or in the final year of studies and, who has taken or will be enrolled in BUS 393, BUEC 391 or BUEC 495. The basis of the bursary will be financial need and good academic standing.

### Pacific National Foundation Endowment Bursary

Program code: UEBO-655

Value: \$2000

Awarded: fall

Terms of reference: To a single parent, undergraduate student in the Faculty of Business Administration, Faculty of Education, Faculty of Applied Sciences or the Faculty of Science. The bursary will be granted to a student wishing to upgrade their professional skills.

The student should have satisfactory academic standing and a demonstrated financial need. A letter expressing job goals and direction should accompany the application form.

### Robert Rogow Bursary in Business Administration

Program code: UEBO-727

Value: \$1000

Awarded: spring

Terms of reference: Granted to undergraduate students in the Faculty of Business Administration based on demonstrated financial need and satisfactory academic performance.

### J. Rose Memorial Bursary

Program code: UPBO-683

Value: \$1000

Awarded: summer

Terms of reference: To an undergraduate or graduate business administration student who is in full time studies. The bursary will be granted on the basis of financial need and satisfactory academic performance. This bursary is provided by the Vancouver Foundation. A departmental recommendation is required.

### Seaspan International Bursary

Program code: UPBO-686

Value: \$1000

Awarded: fall

Terms of reference: To a student, approved as a major, in business administration, who has satisfactory academic standing and financial need.

### Frederick Shen Bursaries in Business Administration and Economics

Program code: UPBO-704

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be available annually to students with an approved major in business administration or economics, on the basis of demonstrated financial need and satisfactory academic performance.

### Vancouver Executives Association Bursary in Business Administration

Program code: UEBO-588

Value: \$1500

Awarded: fall

Terms of reference: To a full-time undergraduate student in business administration. The bursary will be granted on the basis of demonstrated financial need and satisfactory academic standing.

### Charles S. Walker Bursary

Program code: UEBO-731

Value: \$500

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance to students in the Faculty of Business Administration with a concentration in marketing.

### Bruce and Lis Welch Bursary in Business

Program code: UEBO-717

Value: \$1200

Awarded: summer

Terms of reference: Granted to undergraduate students in the Faculty of Business Administration based on demonstrated financial need and satisfactory performance.

### Bing Sum Yip Bursary In Business Administration

Program code: UEBO-686

Value: \$1000

Awarded: fall

Terms of reference: To an undergraduate student in the Faculty of Business Administration. The award will be granted to a student with a satisfactory academic record and demonstrated financial need.

**Elizabeth Young Memorial Bursary**

Program code: UEBO-695

Value: \$500

Awarded: fall

Terms of reference: One or more bursaries will be awarded to undergraduate female students in business administration who demonstrate satisfactory academic achievement and financial need.

**Bursaries for Communication, Art and Technology****Gloria Garrett Carlton Bursary in Dance**

Program code: UEBO-522

Value: \$900

Awarded: fall, spring, summer

Terms of reference: The Gloria Garrett Carlton Bursary in Dance valued at a portion of the income earned on the endowment, will be awarded annually in any term. Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to undergraduate students majoring in dance in the School for the Contemporary Arts.

**Adaline May Clark Bursary**

Program code: UEBO-590

Value: \$400

Awarded: fall

Terms of reference: The late Mrs. Clark has provided for the endowment of funds for bursaries to enable students to attend, or continue to attend university. Students must be enrolled in the School for the Contemporary Arts, and must demonstrate financial need and a high level of achievement in the arts.

**School for the Contemporary Arts Alumni Bursaries**

Program code: UEBO-529

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the School for the Contemporary Arts.

**Murray Farr Bursary in Performing Arts**

Program code: UEBO-679

Value: \$1200

Awarded: spring

Terms of reference: To an undergraduate student in the School for the Contemporary Arts with a performing arts concentration.

**Ancie and Arthur Fouks Bursary in Publishing Studies**

Program code: UEBO-526

Value: \$1000

Awarded: fall

Terms of reference: One or more bursaries will be awarded annually in the fall term to a student enrolled in a degree program in publishing studies. Awards may also be given to graduate students undertaking a master's program in publishing studies. Student must have a minimum of 85 units. The successful applicant should have financial need, a satisfactory academic standing and a demonstrable intent to pursue a career in the publishing industry. Applicants must submit to the publishing studies program committee a resume, including education and work history, and at least one short sample of professional, academic or business writing or portfolio piece to be considered for the award.

**Patsy Hui Annual Bursary in Fine Arts**

Program code: UPBO-710

Value: \$1000

Awarded: summer

Terms of reference: To an undergraduate student in their third year of study in the bachelor of fine arts degree program in any term in good academic standing and based on financial need. Students may

be pursuing a dance, film, music, theatre or visual arts major.

**Linda Marguerite Johnston Bursary in the Arts**

Program code: UEBO-543

Value: \$500

Awarded: fall

Terms of reference: The award(s) will be given in the fall term to undergraduate students, entering fourth year, with concentration in any area of study in the Centre for Performing Arts.

**Tom Mallinson Bursary in Communication**

Program code: UEBO-518

Value: \$1000

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance to undergraduate students in the School of Communication with an interest in the field of interpersonal communication.

**Helen Pitt Bursary in Visual Arts**

Program code: UPBO-567

Value: \$500

Awarded: fall

Terms of reference: The Helen Pitt Bursary in Visual Arts will be awarded based on satisfactory academic standing and demonstrated financial need to second, third or fourth year full-time undergraduate students with an approved major or extended minor in visual arts. Please note that students receiving the Secondary Scholarship are not eligible to receive a bursary from the funds as well.

**Bursaries for Education Students****University Women's Club of Vancouver/Jean Beaty Memorial Bursary in Education**

Program code: UEBO-519

Value: \$700

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance to a mature student in the Faculty of Education.

**May Bennett Bursary**

Program code: UEBO-585

Value: \$150

Awarded: fall

Terms of reference: To undergraduate students in the Faculty of Education. Applicants should be prepared to teach in British Columbia and demonstrate dedication to the teaching profession.

**Canadian Yugoslav Community Association Undergraduate Bursary in Education**

Program code: UEBO-703

Value: \$1000

Awarded: fall

Terms of reference: To an undergraduate third or fourth year student in the Faculty of Education. The bursary will be granted on the basis of demonstrated financial need and satisfactory academic performance.

**Delta Kappa Gamma Society – Delta Chapter Bursary**

Program code: UPBO-610

Value: \$500

Awarded: fall

Terms of reference: The bursary is offered based on demonstrated financial need and satisfactory academic performance to students with dependants who are entering or enrolled in the Professional Development Program in the Faculty of Education at Simon Fraser University.

**Faculty of Education Alumni Bursaries**

Program code: UEBO-533

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the Faculty of Education.

**Faculty of Education Special Bursary**

Program code: UEBO-595

Value: \$1000

Awarded: fall, spring

Terms of reference: To a student enrolled in the Professional Development Program who is also enrolled in a minor in learning disabilities, and who is entering EDUC 405 in either spring or fall term. The bursary is awarded for the term in which EDUC 405 is undertaken.

**Polly Evenden Bursary in Geography Education**

Program code: UEBO-544

Value: \$900

Awarded: fall, spring, summer

Terms of reference: The bursary will be granted on the basis of demonstrated need and satisfactory academic performance to a student who has completed a bachelor's degree from Simon Fraser University with an honors or major in geography or who is approved in such a program and is entering the Professional Development Program. Applicants must be intending to teach geography upon graduation and provide a supporting letter outlining their career goals and this intent.

**JimMar Bursary in Education**

Program code: UEBO-539

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be granted to undergraduate students in the Faculty of Education. The bursary is granted in any term based on demonstrated financial need and satisfactory academic performance.

**Pacific National Foundation Endowment Bursary**

Program code: UEBO-655

Value: \$2000

Awarded: fall

Terms of reference: To a single parent, undergraduate student in the Faculty of Business Administration, Faculty of Education, Faculty of Applied Sciences or the Faculty of Science. The bursary will be granted to a student wishing to upgrade their professional skills. The student should have satisfactory academic standing and a demonstrated financial need. A letter expressing job goals and direction should accompany the application form.

**Maureen Pollard Memorial Bursary**

Program code: UEBO-734

Value: \$750

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance to students in the Professional Development Program in the Faculty of Education. Preference, when possible, will be given to students in the elementary stream.

**Sylvia R.H. Rice Memorial Bursary**

Program code: UEBO-660

Value: \$2000

Awarded: fall

Terms of reference: To a first year student in the Professional Development Program in the Faculty of Education. Satisfactory academic standing and demonstrated financial need is required.

**R.R. Smith Bursary in Education**

Program code: UEBO-745

Value: \$850

Awarded: fall

Terms of reference: To a student in good academic standing who is enrolled in the Professional

Development Program (PDP) on the basis of demonstrated financial need.

#### **Dina Taddei Bursary in Education**

Program code: UEBO-756

Value: \$500

Awarded: fall

Terms of reference: Awarded annually on the basis of demonstrated financial need to a student in good academic standing registered in the Professional Development Program (PDP).

#### **Vancouver Elementary School Teachers' Association Bursary**

Program code: UPBO-577

Value: \$600

Awarded: fall

Terms of reference: To students who are residents of Vancouver or students who have attended a Vancouver elementary school and are proceeding to a degree or certificate in teaching. Recipients are selected also on the basis of need. The awards offered are as follows.

- Elizabeth Dobbins Memorial Bursary open to students entering third year in the Faculty of Education at Simon Fraser University.
- Owen J. Thomas Memorial Bursary open to students entering the fourth year in the Faculty of Education at Simon Fraser University.

#### **Bursary for Environment Students**

##### **Jennifer O'Neill Memorial Annual Bursary in Environmental Science**

Program code: UPBO-705

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To an undergraduate student in their third year of study in the Environmental Science Program.

#### **Bursaries for Health Sciences Students**

##### **Dr. Cam Coady Foundation Annual Undergraduate Bursary in Health Sciences**

Program code: UPBO-708

Value: \$2000

Awarded: fall

Terms of reference: To an undergraduate student in the Faculty of Health Sciences on the basis of financial need and satisfactory academic standing. Where possible, preference will be given to students entering their first year of study in the Faculty of Health Sciences.

##### **Vancouver Foundation Health Science Bursaries**

Program code: UPBO-578

Value: \$1000

Awarded: fall, spring

Terms of reference: The bursary assistance program is limited to full-time students studying in health sciences. The funds are directed to students who have completed at least one year of post-secondary education and can demonstrate financial need. Areas of study include any of the following: pre-med program, kinesiology, biomedical engineering, and gerontology.

#### **Bursaries for Science Students**

##### **Peter and Elizabeth Belton Bursary in Biology**

Program code: UEBO-729

Value: \$500

Awarded: summer

Terms of reference: To undergraduate students in the Faculty of Science majoring in biology. The bursary is granted on the basis of demonstrated financial need and satisfactory academic performance.

##### **Undergraduate Biology Student Union Bursary**

Program code: UPBO-695

Value: \$100

Awarded: summer

Terms of reference: One bursary valued at \$100 will be available annually in any term. The bursary, based on financial need, will be granted to an undergraduate student who is an approved biology major and is in good academic standing.

##### **Canadian Federation of University Women - North Vancouver Bursary**

Program code: UPBO-574

Value: \$1000

Awarded: spring

Terms of reference: To a female undergraduate student enrolled in the second, third, or fourth year in any math or science faculty or professional school. The recipient should be in financial need and in satisfactory academic standing. The recipient must be a resident of North Vancouver or a graduate of a North Vancouver secondary school (School District #44).

##### **Curzon-Digman Bursary**

Program code: UEBO-594

Value: \$750

Awarded: fall, spring, summer

Terms of reference: Available to graduate students in physics or for majors or honors undergraduate students in physics, mathematical physics, chemical physics, biophysics or other joint programs with physics. These bursaries are subject to demonstrated financial need and good academic standing. Nominations will be made by the chair of the Department of Physics in consultation with Financial Aid and Awards.

##### **IODE Burnaby Municipal Chapter Bursary**

Program code: UEBO-658

Value: \$750

Awarded: fall, spring

Terms of reference: To third or fourth year students majoring in science or applied sciences. Students must be Canadian citizens and graduates of Burnaby Senior Secondary School. Financial need and satisfactory academic standing is required.

##### **Ralph Kerr Memorial Bursary**

Program code: UEBO-599

Value: \$1000

Awarded: fall

Terms of reference: To undergraduate students. Preference will be given to students who are in their third or fourth year of studies in the physics or engineering programs. This bursary fund has been established in memory of Ralph Kerr, a charter member of Simon Fraser University and a former employee of the Department of Physics.

##### **School of Kinesiology Alumni Bursaries**

Program code: UEBO-532

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the School of Kinesiology.

##### **Lantic Inc. Bursaries**

Program code: UPBO-553

Value: \$1000

Awarded: fall

Terms of reference: To undergraduate students, who are in their third or fourth year of study at Simon Fraser University. Two bursaries are available to students majoring in business administration, and three bursaries to students majoring in economics, or the sciences, including mathematics and statistics.

##### **Margaret Lawson McTaggart-Cowan Alumni Bursary**

Program code: UEBO-600

Value: \$550

Awarded: fall

Terms of reference: To a female student who is majoring in mathematics and who has completed at least two full-time terms at Simon Fraser University.

##### **Oakley Family Endowed Bursary in Science**

Program code: UEBO-736

Value: \$450

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance to students in the Faculty of Science.

##### **Pacific National Foundation Endowment Bursary**

Program code: UEBO-655

Value: \$2000

Awarded: fall

Terms of reference: To a single parent, undergraduate student in the Faculty of Business Administration, Faculty of Education, Faculty of Applied Sciences or the Faculty of Science. The bursary will be granted to a student wishing to upgrade their professional skills. The student should have satisfactory academic standing and a demonstrated financial need. A letter expressing job goals and direction should accompany the application form.

##### **Faculty of Science Alumni Bursaries**

Program code: UEBO-528

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the Faculty of Science.

##### **SFU Molecular Biology and Biochemistry Student Union Bursary**

Program code: UPBO-608

Value: \$100

Awarded: spring

Terms of reference: The bursary will be granted annually in the spring term to a student with an approved major in MBB. The bursary is based on financial need and satisfactory academic performance.

##### **Irene May Surbey Bursary**

Program code: UEBO-723

Value: \$900

Awarded: spring

Terms of reference: Granted to undergraduate students in the Faculty of Science or in the Faculty of Applied Sciences. The bursary is granted on the basis of demonstrated financial need and satisfactory academic performance.

##### **Ken Turner Memorial Endowment Fund Bursary**

Program code: UEBO-639

Value: \$1000

Awarded: fall, spring

Terms of reference: To third or fourth year undergraduate students with a specialization in marine biology. All students are welcome to apply. However, preference will be given to a student from the Kimberly area if all other qualifications have been met. This bursary is in memory of Ken Turner, a graduate of the resource management program. A departmental recommendation is also required.

##### **Urea Formaldehyde Foam Insulation Action Association Bursary**

Program code: UEBO-607

Value: \$250

Awarded: fall, spring

Terms of reference: To students who have completed at least 60 units and who are studying in the areas of toxic chemicals or pollutants and their effects on human health and functioning. Please document eligibility. The endowment has been established by the association.

### Vancouver Foundation Health Science Bursaries

Program code: UPBO-578

Value: \$1000

Awarded: fall, spring

Terms of reference: The bursary assistance program is limited to full-time students studying in health sciences. The funds are directed to students who have completed at least one year of post-secondary education and can demonstrate financial need. Areas of study include any of the following: pre-med program, kinesiology, biomedical engineering, and gerontology.

### Scott Wilson Memorial Bursary in Physics

Program code: UEBO-748

Value: \$800

Awarded: fall

Terms of reference: To an undergraduate student(s) enrolled full time in a physics program in good academic standing on the basis of demonstrated financial need. Preference will be given to students who are returning to university after a break in their studies, lasting at least one year or more.

## Awards for the University Community

Awards are given in recognition of distinguished intellectual, cultural, social or athletic contribution to university life. Awards usually consist of monetary remuneration but may also come in the form of a prize or medal. Many of the following awards have been made possible by generous donations.

### Regulations for Academic and Service Awards

The following regulations govern all prizes, medals or awards over which the University has jurisdiction.

- In most cases, nominations are submitted directly to Financial Aid and Awards. Both undergraduate and graduate students are eligible unless otherwise indicated.
- Undergraduate students must have achieved a minimum CGPA of 2.00 during the term of their contribution and must not be on academic probation, or in the case of first term or transfer students, must possess an equivalent secondary school or college standing.
- Undergraduates must be enrolled in a minimum of nine units of normal graded courses in the term of eligibility. Challenge, audit, and credit free courses are not considered. Students who enrol in fewer than nine units or subsequently drop below nine units may have their awards cancelled.
- Graduate students must be enrolled for residence credit in an approved full time program in the term of eligibility. Students who do not enrol or subsequently change to on-leave status may have their awards cancelled.
- Candidates must submit a paper application form to Financial Aid and Awards or be nominated by a member (or members) of the Simon Fraser University faculty, staff, student body or alumni. Individuals submitting a nomination for an award must file the nomination form with Financial Aid and Awards.
- Normally, only one intervening term will be allowed between the term in which the enrolled student made their contributions and the term in which the award is adjudicated.
- Where contributions are over and above usual expectations, remunerated or assigned activities, such as course assignments or teaching duties, may be considered for recognition.
- Unless otherwise stated, awards are tenable only at Simon Fraser University for the term indicated on the notice and may not be deferred.

## Awards for All Students

### Aboriginal Student Leader Award

Program code: UUAO-120

Value: \$2000

Awarded: fall, spring, summer

Terms of reference: Awards are available each year to graduate and undergraduate aboriginal students attending Simon Fraser University who have a living connection to their own aboriginal community and who have completed 30 units at the University. The recipient will be in good academic standing and have demonstrated excellence in one or more of service to the University, community service, cultural contribution and overcoming personal or systemic barriers. Documentation supporting the student's community connection, service and volunteer activities shall be submitted to Financial Aid and Awards. The Senate Undergraduate Awards Adjudication Committee will make the award.

### Alumni Association Outstanding Student Leadership Award

Program code: UPAO-167

Value: \$2000

Awarded: summer

Terms of reference: Granted to a student in any faculty who is in his/her third or fourth year with a minimum of thirty (30) units completed at Simon Fraser University. The recipient will have demonstrated a combination of outstanding academic achievement and outstanding performance or leadership in another endeavor at Simon Fraser University or in the broader community. The achievement may be in athletics or the arts, in service to the University or to the community at large. Nominations, including a letter and resume from the nominee and a supporting letter from an individual who can speak to the achievements of the nominee, should be sent from the chair or director of the nominee's department or school to the registrar by April 15 each year. The award will be made by the Senate Undergraduate Awards Adjudication Committee. Presentation of the Alumni Association Outstanding Student Leadership Award will take place at the annual outstanding alumni awards ceremony. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

### Dr. B. R. Ambedkar Humanitarian Award

Program code: UPAO-201

Value: \$1000

Awarded: summer

Terms of reference: The recipient will have demonstrated a combination of outstanding academic achievement and outstanding leadership and/or service at Simon Fraser University. This may be service to the University or by representing the University to the community at large. When possible, preference will be given to service in relation to human rights. Applicants may apply for the award themselves, or may be recommended by a member of the University community. Applicants should provide a copy of volunteer service with the application. Letters of recommendation will also be considered. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

### BC Bearing Engineers Limited Award

Program code: UEAO-537

Value: \$300

Awarded: summer

Terms of reference: Granted to a co-op student in any faculty who is doing his/her work term(s) in Latin America, including Mexico. The award is intended to off-set travel and/or living expenses for the period of time (not exceeding one year) spent in Latin America, or Mexico. If more than one student applies for the award, then the best CGPA will be the deciding factor. The award will be made by the Senate Undergraduate Awards Adjudication Committee on

the recommendation of the director, Co-operative Education.

### B.C. Sugar Achievement Award

Program code: UEAO-526

Value: \$4500

Awarded: summer

Terms of reference: Granted to a Simon Fraser University faculty, staff member, student or multiple of the same who meet the following criteria: winner of national or international competition, or recipient of national or international prize or award; history of leadership in recipient's field; accomplishment(s) relate directly to responsibilities and activities at Simon Fraser University. Nominations of an individual or group should be forwarded to Financial Aid and Awards by April 15th of each year. Nominations should include a description of the nominee's achievements, a curriculum vitae (if appropriate), and three letters of recommendation.

### Fiona Candy Award

Program code: N/A

Value: \$2000

Awarded: spring

Terms of reference: Awarded annually to an international undergraduate student in any faculty in good academic standing who has overcome personal adversity and/or bureaucratic difficulties in the pursuit of their education. Application packages must include a letter from the candidate outlining their adverse circumstances. The award will be granted upon the completion of the student's last term at Simon Fraser University to obtain their undergraduate degree. The recipient of the award will be determined by the Senate Undergraduate Awards Adjudication Committee based upon the nomination of the Associate Vice-President, Students and International.

### Deans' Convocation Medals

Program code: UUAO-002

Awarded: summer

Terms of reference: To a graduating student from each faculty. The dean of the respective faculty will recommend a student who is from the top five percent of graduating students within that faculty. The top five percent is defined by cumulative GPA. All nominations are to be forwarded to Financial Aid and Awards.

### Terry Fox Gold Medal

Program code: UUAO-001

Value: \$1000

Awarded: summer

Terms of reference: To any person who has demonstrated those personal qualities of courage in adversity and dedication to society which have been exemplified by Terry Fox and his Marathon of Hope. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

### Alexander Fraser Award in Piping and Drumming

Program code: UEAO-011

Value: \$500

Awarded: spring

Terms of reference: These awards are made following a competition among the pipers and drummers on campus. A cash award will be made to the student judged best in each of the two categories. In addition, a cash award may also be made to the student who has contributed most significantly to the development of highland tradition at Simon Fraser University.

### Mahatma Gandhi Annual Student Award

Program code: UPAO-210

Value: \$1500

Awarded: fall

Terms of reference: Granted to a current or newly admitted full-time Simon Fraser University student in good academic standing on the basis of demonstrated community service and leadership. Voluntary service may include any voluntary service



which contributes toward the betterment of the human conditions: health related and caring services, literacy and training programs, peer group assistance, work with peace organizations, social justice initiatives, community building services, anti-violence programs, anti-poverty programs, and local, national and international programs that address issues related to peace, justice, and human rights. Applications packages must include

- a) a one page description of the student's volunteer work including: why the specific volunteer work was chosen, the student's experience as a volunteer, and the effectiveness (or impact of their volunteer work
- b) include at least one letter of reference from a person in the organization or group with which they volunteered
- c) a resume which includes all paid and volunteer work to date.

Complete application packages must be received no later than August 31 of each year. Recipients will be recognized at the Gandhi Jayanti each year. The recipient of award will be determined by the Senate Undergraduate Awards Adjudication Committee based upon the nomination of the Institute of Humanities Gandhi Committee.

#### **Governor General's Silver Medal**

Program code: UPAO-001

Awarded: summer

Terms of reference: The silver medal will be awarded to the student whose record, in the opinion of the faculties, is the most outstanding in the graduating classes in any faculty. Eligible candidates should have completed a minimum of 60 units at Simon Fraser University. The award shall be made to the student who has maintained a high scholastic standing during not fewer than six terms or the equivalent of 60 units or more at Simon Fraser University.

#### **Laurine Harrison Undergraduate Service Award**

Program code: UEAO-545

Value: \$1250

Awarded: summer

Terms of reference: Granted annually to students in good academic standing from any faculty. The award will be disbursed on the basis of demonstrated leadership and/or service at Simon Fraser University. The student's leadership or service may be to the student community, (demonstrated by service to the Student Society, Board of Governors, Senate, or some other University body on which students are represented) or by advocating for students in the community at large (as demonstrated by fundraising activities, or service to off-campus student advocacy groups). Application packages must include a letter from the candidate outlining either volunteer service, as well as letter(s) of recommendation confirming these activities. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

#### **Laurine Harrison Courage to Succeed Undergraduate Award**

Program code: UEAO-546

Value: \$1250

Awarded: summer

Terms of reference: To a student in good academic standing from any faculty who has overcome adversity in the pursuit of their education. Application packages must include a letter from the candidate outlining their adverse circumstances, as well as confirming letter(s) of recommendation.

#### **Stephen Harold Edward Herring Prize**

Program code: UEAO-048

Value: \$1500

Awarded: summer

Terms of reference: The Herring Prize will honor the development of a device or innovative way to restore lost functions and provide increased independence for people who have been paralyzed. Submissions will be evaluated by the Herring committee based on the originality of the research, keeping in mind the contribution of direct and effective research in alleviation and curing injuries made by impact that cause any paralysis. Eligible candidates will be graduate or undergraduate students at Simon Fraser University in any faculty. The submission should include a description of the research, device or innovation to alleviate or cure injuries causing paralysis, and two letters of support from faculty who know the student well and can attest to the originality of the research and role played by the student. Submissions should be sent to Financial Aid and Awards by April 15th. The Herring Prize will be awarded at the February awards ceremony in the following year. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the Stephen Herring prize committee.

#### **Hong Kong University BC Alumni Award**

Program code: UEAO-538

Value: \$1000

Awarded: spring

Terms of reference: To a co-op student in any faculty who is doing his/her work placement in Hong Kong. The award is intended to offset travel and/or living expenses for the period of time (not exceeding one year) spent in Hong Kong. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the recommendation of the Co-operative Education program director.

#### **Honor Roll**

Program code: N/A

Awarded: fall, spring, summer

Terms of reference: A limited number of students will be admitted each term to the University honor roll, mainly on the basis of excellent work completed in the previous term. This award will be shown on the student's permanent record. Admission to the honor roll requires that the student

- must have completed a minimum of 30 units at Simon Fraser University by the end of the term being evaluated
- must have completed at least 12 units in the term being evaluated
- must achieve a minimum term GPA of 4.00 calculated on all normally graded courses completed in the term being evaluated.

#### **International Co-operative Education Awards**

Program code: UUAO-203

Value: variable

Awarded: fall, spring, summer

Terms of reference: To students in good academic standing from any faculty who are accepted for a prioritized Simon Fraser University international co-operative education placement. These awards will be granted by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, Work Integrated Learning. In prioritizing placements the director of Work Integrated Learning's considerations will include but not necessarily be limited to the following: geographical location, salary rate and placement costs (i.e. work permits, association fees, immunization, travel etc.) Awards will be made to students participating in prioritized placements on the basis of academic performance.

#### **International Mobility Awards**

Program code: UUAO-204

Value: variable

Awarded: fall, spring, summer

Terms of reference: To students in good academic standing from any faculty who are accepted for an SFU International exchange or field school program in

targeted locations. Awards values will be determined based on location of the formal exchange or field school. Awards will be made to students participating in targeted programs on the basis academic performance and their engagement in internationalization activities (i.e. volunteer activities, mentorships, community activities, international work experience). These awards will be granted by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, SFU International.

#### **Judy Kelly Humanitarian Award**

Program code: UEAO-522

Value: \$650

Awarded: summer

Terms of reference: To an undergraduate student in any faculty who has provided volunteer services to the university community. Particular preference will be given to students who have provided aid to students with physical disabilities. Applicants may apply for the award themselves, or may be recommended by a member of the University community. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

#### **Living Personal Truths Award**

Program code: UPAO-195

Value: \$400

Awarded: summer

Terms of reference: The award is given to a student in any faculty who has demonstrated a significant contribution to reducing discrimination and/or increasing awareness of sexual orientation and gender diversity. Applications must include a letter and resume from the student and a supporting letter from an individual who can speak to their achievements. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

#### **London Drugs 60th Anniversary Student Awards**

Program code: UEAO-540

Value: \$1000

Awarded: summer

Terms of reference: The awards will be granted to graduate or undergraduate students in any faculty whose volunteer activities have made a significant contribution to the development and/or improvement of campus community life. Candidates must be in good academic standing and should demonstrate their involvement in unpaid volunteer activities by providing their resumé and cover letter describing their volunteerism, the length of service and time commitment dedicated to such interests and include a letter of reference from a supervisor of the candidate's volunteer work. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

#### **Iain and Mary Ormsaig MacKinnon Memorial Award**

Program code: UEAO-045

Value: \$2500

Awarded: fall

Terms of reference: The award is granted to an undergraduate student who plays the bagpipe either as a solo musician or as part of any pipe band, and who has a CGPA of 2.5 (or greater). Applications for the award should include a letter of reference from an appropriate individual discussing the applicant's activities as a solo piper or participation in a pipe band.

#### **Meloche Monnex Outstanding Student Leadership Award**

Program code: UPAO-199

Value: \$1000

Awarded: summer

Terms of reference: The award will be granted to a student in any faculty who is in his/her third or fourth year with a minimum of 30 units completed at Simon

Fraser University. The recipient will have demonstrated a combination of outstanding academic achievement and outstanding performance or leadership in another endeavor at Simon Fraser University or in the broader community. The achievement may be in athletics or the arts, in service to the University or to the community at large. Applications must include a letter and resume from the student and a supporting letter from an individual who can speak to their achievements. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

#### **Minerva Foundation Annual Award for BC Aboriginal Women**

Program code: UPAO-211

Value: \$2500

Awarded: fall

Terms of reference: Awarded in any term to Aboriginal women who are residents of BC. These awards assist single mothers in advancing their education, retrain mature women returning to the workplace after a long absence and assist women with disabilities to overcome education barriers. Preference will be given to students attending the Simon Fraser University Kamloops program. The awards will be granted on the basis of good academic standing and any one or more of the criteria listed above. Supporting documentation confirming the candidate's aboriginal status and reference to any of the above criteria may be required.

#### **Mitsubishi Canada Limited Student Exchange Awards**

Program code: UEAO-064

Value: \$2000

Awarded: fall, spring, summer

Terms of reference: The Mitsubishi Canada Limited Student Exchange Awards will be awarded annually to undergraduate students who are undertaking study in Japan on a formal exchange program with one of Simon Fraser University's Japanese exchange partners. Eligibility criteria is as follows.

- 1) 2.7 cumulative grade point average
- 2) completion of at least one year of study at Simon Fraser University
- 3) two letters of reference from faculty
- 4) accepted for enrollment by one of Simon Fraser University's Japanese exchange partners.

Awards will be made on the basis of academic performance. The awards will be made by the Senate Undergraduate Adjudication Committee on the nomination of the director, SFU International.

#### **Muslim Students' Association Award**

Program code: UPAO-183

Value: \$300

Awarded: fall

Terms of reference: One award will be available annually in the fall term. The award is granted to an undergraduate student in good academic standing from any faculty. The successful applicant will be involved in the Muslim Students' Association for two terms promoting better understanding and open dialogue between Muslims and the campus community at large. The applicant should submit a letter detailing his/her volunteer activities and a brief synopsis of how this activity helped to promote Islamic awareness.

#### **C.D. Nelson Memorial Prize**

Program code: UEAO-019

Value: \$500

Awarded: summer

Terms of reference: The C.D. Nelson Memorial Prize was established at Simon Fraser University in 1975 in memory of Professor C.D. Nelson, first head of the Department of Biological Sciences, who gave so fully of himself to the whole University community. One C.D. Nelson Memorial Prize, valued at approximately \$500 for the purchase of a work of art, will be

awarded annually. The prize will be granted to a current or retired faculty or staff member, or to a current student who has made an outstanding contribution to Simon Fraser University other than normal or academic work. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th. Note, will be offered every other year given insufficient interest on an annual basis.

#### **Dr. M. Sheila O'Connell Prize for Children's Literature**

Program code: UEAO-534

Value: \$1500

Awarded: summer

Terms of reference: To an undergraduate student who has completed work in the general subject area of children's literature, fiction or criticism, or is working toward publication of a piece of children's literature. A proposal outlining the story should be forwarded by candidates to the cross-disciplinary committee from the Faculty of Education, the Department of English and the School of Communication. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the recommendation of the joint committee.

#### **Eileen Purkiss Memorial Endowment Award**

Program code: UEAO-023

Value: \$100

Awarded: summer

Terms of reference: The award will be available to graduate and undergraduate international students. In adjudicating the award, consideration will be given to the special contributions made by the student to the social and cultural exchange and development of international students at Simon Fraser University with specific reference to volunteer service, promotion of goodwill, and the organization of social, cultural and related events. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th, with appropriate letters of reference. The endowment fund is established in memory of Eileen Purkiss.

#### **Recreation Leadership Awards**

Program code: UUAO-101

Value: \$600

Awarded: fall, spring

Terms of reference: The purpose of these awards is to recognize and encourage students' contribution in, and development of, leadership initiatives in the University recreation programs. Up to 32 awards of \$600 each are available to: entering students on the basis of recommendations from secondary school of demonstrated leadership in the school program, and to continuing students who have demonstrated consistent leadership skills and potential for further development. Students must be nominated by the director of Recreational Services and Athletics, maintain a cumulative 2.00 grade point average and enrol in nine units. Nomination will be made by the director of Recreational Services and Athletics to the Senate Undergraduate Awards Adjudication Committee.

#### **Recreation Promotion Award**

Program code: UUAO-110

Value: \$500

Awarded: fall, spring

Terms of reference: The awards recognize and encourage gifted physically active university students who contribute to the promotion of a university culture of physical activity. The award is available to entering and continuing full-time undergraduate students in good academic standing (maintain a minimum CGPA of 2.00) who have demonstrated a personal physical activity commitment and promoted physical activity on-campus. Student must be nominated by the director of Recreational Services and Athletics. The awards will be granted by the Senate Undergraduate Awards Adjudication Committee.

#### **Louise Berthe Samson Undergraduate Award**

Program code: UEAO-060

Value: \$450

Awarded: summer

Terms of reference: To a third or fourth year undergraduate student who is doing volunteer work or a work project related to the applicant's field of study in a recognized charitable or community organization. The successful applicant may be in any faculty and should have a cumulative GPA of at least 3.0. The application should include a letter outlining the applicant's chosen course of studies, a resume, an explanation of the volunteer or work project activity, and its impact on the applicant. There can be no more than a one-term gap between the volunteer or work project activity and the awarding of the Samson Award. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

#### **Simon Fraser University Seniors Lifelong Learners Society Community Service Award**

Program code: UEAO-547

Value: \$1000

Awarded: summer

Terms of reference: Granted on the basis of good academic performance and leadership and/or service at Simon Fraser University to a student in any faculty. The student's leadership or service may be to the university community or by representing the university to the community at large. Applications packages must include a resume outlining the candidate's leadership activities and volunteer service as well as letter(s) of recommendation confirming these activities. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

#### **Simon Fraser University Co-operative Education Merit Award**

Program code: UPAO-198

Value: \$500

Awarded: fall, spring, summer

Terms of reference: The award will be to a full-time undergraduate student who has demonstrated outstanding performance on a co-operative education work placement focusing on business projects in any of the last three terms. The award will be given upon the successful completion and return from the work placement. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, Work Integrated Learning.

#### **SFU-India Student Mobility Awards**

Program code: UPAO-209

Awarded: fall, spring, summer

Terms of reference: Awarded to Simon Fraser University students in any faculty undertaking study or experiential learning in India with one of Simon Fraser University's India exchange partners, field schools, projects or co-op partners. Eligibility criteria are as follows.

- 1) awards will be available each term to students in good academic standing from any faculty,
- 2) students must be accepted and approved for a Simon Fraser University experiential learning opportunity in India such as an international exchange, field school program, co-operative education work term, volunteer or service learning assignment,
- 3) awards values will be up to \$4000 based on academic performance and their prior engagement in internationalization activities (e.g. volunteer activities, mentorships, community activities),
- 4) award eligibility consideration will include but not necessarily be limited to, the following criteria: geographical location within India, salary, stipends, honorariums and placement costs (e.g. work permits, association fees like AIESEC, immunization, travel, etc.)

The award will be made by the Senate Undergraduate Awards Adjudication Committee on

the nomination of the director, SFU International and director, Simon Fraser University's Work Integrated Learning.

#### **Gordon M. Shrum Gold Medal**

Program code: UPAO-002

Value: \$500

Awarded: summer

Terms of reference: An award of a gold medal and \$500 is to be awarded in May of each year to an outstanding student in any faculty who has completed the requirements for the bachelor's degree during the preceding summer, fall or spring term. The award shall be made to the student who has maintained a high scholastic standing during not fewer than six terms or the equivalent of 60 units or more at Simon Fraser University and who, by participating in extracurricular activities, has shown outstanding qualities of character and unselfish devotion to Simon Fraser University. The award shall be made upon the recommendation of the Awards Committee after consultation with members of the faculty and representatives of the student body.

#### **Simon Fraser University Pipe Band Memorial Award**

Program code: UEAO-043

Value: \$2300

Awarded: fall

Terms of reference: To a Simon Fraser University student playing with the University pipe band who has particular promise in piping or drumming and who has maintained a satisfactory academic record. Recommendation is required from the Simon Fraser University Pipe Band major.

#### **Simon Fraser University Piping Award**

Program code: UUAO-006

Value: \$800

Awarded: fall, spring, summer

Terms of reference: Thirteen awards are available to Simon Fraser University students who are members of the Simon Fraser University Pipe Band. The awards are awarded to full-time students in good academic standing in recognition of significant contribution to the University and community through their participation with the Simon Fraser University Pipe Band. The awards will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director of ceremonies.

#### **Ted Sinnott Memorial Award**

Program code: UEAO-027

Value: \$450

Awarded: summer

Terms of reference: To a student who has made a contribution of a voluntary nature to the University community, thereby reflecting positively the cheer and goodwill which the late Ted Sinnott generated at Simon Fraser University for so many years. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

#### **William A. (Bill) Stewart Volunteer Leadership Award**

Program code: UEAO-049

Value: \$850

Awarded: summer

Terms of reference: To graduate or undergraduate students in any faculty whose volunteer activities have made a significant contribution to the development and/or improvement of campus community life. The application should include a letter from the student outlining his/her volunteer activities and the impact those activities have had on campus life. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

#### **Dr. Abe Unrau Memorial Co-op Prize**

Program code: UEAO-039

Value: \$400

Awarded: summer

Terms of reference: The prize is granted to an outstanding co-op student in any faculty at the time of graduation on the basis of cumulative grade point average, written evaluations from work term employers and demonstrated leadership. Successful candidates must have completed a minimum of four work terms. A student from the School of Engineering Science co-op program may also be considered if he/she has successfully completed three work terms and a research term (the undergraduate thesis project) producing an undergraduate thesis. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, Work Integrated Learning.

#### **Joan H. Walter Memorial Award**

Program code: UEAO-030

Value: \$90

Awarded: fall

Terms of reference: This award will be awarded biennially to a student who has been employed in the tour guide service. Special consideration will be given to the student's willingness to serve and personal commitment to the University community, and to the degree to which Simon Fraser University has been promoted with enthusiasm and accurate information. A nomination from the director of student recruitment is required.

#### **Roger G. Welch Alumni Prize**

Program code: UEAO-172

Value: \$900

Awarded: summer

Terms of reference: To an alumnus/alumni of Simon Fraser University pursuing a degree program or a post baccalaureate diploma. The prize will honor or recognize students who have demonstrated leadership, citizenship and dedication in service to the University community. Participation in the wider community will also be considered. The granting of the prize will be based on evidence submitted by the applicant or by another person, group or association. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

#### **Ben West Student Exchange Annual Award**

Program code: UPAO-203

Value: \$1000

Awarded: summer

Terms of reference: To a student in good academic standing in his or her third or fourth year of study in any undergraduate program, enrolled to participate in a term exchange. The award will be granted on the basis of outstanding community service. Where possible preference will be given to students enrolled in the Faculty of Business Administration pursuing an exchange in Asia.

#### **Westcoast Coalition for Human Dignity Community Service Award**

Program code: UEAO-201

Value: \$300

Awarded: summer

Terms of reference: The award is offered to students in any faculty based on demonstrated commitment to and leadership in opposing bigotry and advancing human rights through their work in schools, community or non-governmental organizations that work to eliminate racism, sexism, xenophobia, and/or homophobia, or that work to provide services to victims of such. To be considered eligible, candidates must demonstrate their involvement in unpaid volunteer activities by providing their resume and cover letter describing their volunteerism, the length of service and time-commitment dedicated to such interests and including a letter of reference from a supervisor of the candidate's volunteer work. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

### **Awards for Applied Sciences Students**

#### **Mark and Nancy Brooks Computing Science Innovation Award**

Program code: UEAO-052

Value: \$750

Awarded: fall

Terms of reference: Granted to a computing science student in good academic standing who demonstrates exceptional accomplishment, promise or innovation in the area of computing science outside classroom work. The application should include a description of the interest or innovative ideas that student is considering. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School of Computing Science.

#### **Computing Science Graduation Award**

Program code: UEAO-529

Value: \$500

Awarded: summer

Terms of reference: To the top graduating student in computing science. If there are two students who qualify, the award will be given to the student who has demonstrated service to the computing science undergraduate student body or to the University. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director of the School of Computing Science.

#### **Computing Science Student Society Award**

Program code: UEAO-042

Value: \$2000

Awarded: fall, spring

Terms of reference: To undergraduate students in computing science, who, if declared majors, meet the GPA requirements to stay in the school or, if not a declared major, meets the school's GPA requirements to declare. Candidates need not have completed all the courses required to declare a major in computing science. Applicants must demonstrate service to the University community, in particular to the undergraduate Computing Science Student Society and/or the computing science undergraduate student body. Financial need may be taken into account if more than one student qualifies for the award. Applications for the award should be submitted to the director of the School of Computing Science and will include a letter discussing University community involvement or involvement with the society. Recommendations from any member may be submitted to the director. The awards will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director of the School of Computing Science in consultation with the undergraduate computing science student society. Applications for the award should be submitted to the director of the School of Computing Science by January 2 (spring award) or by September 1 (fall award).

#### **Engineering Science Undergraduate Student Project Award**

Program code: UEAO-535

Value: \$100

Awarded: fall, spring, summer

Terms of reference: Given annually for projects proposed by Simon Fraser University engineering science undergraduate students. The project proposals submitted for consideration should contain a description of the project, category as noted below, the benefits to engineering science students, the University or to industry, an implementation schedule including a deadline and a contact student who is enrolled, and a complete cost breakdown. The project can fall into one of four categories that will be ranked according to the rating criteria (first criteria being the highest).

**Category A - Competition**

- projects that will be entered to compete in competition
- rating criteria: within the scope of Simon Fraser University engineering science, ambitious, team oriented, scientific merit
- awards will include travel costs associated with competition participation

**Category B - Entrepreneurial**

- projects that expect to produce a workable prototype. A brief business plan should be included in the project proposal

- rating criteria: pragmatic, cost effective, visionary

**Category C - Class**

- projects that originated from an engineering science class or a special projects laboratory

- rating criteria: originality, usability, team oriented

**Category D - Miscellaneous**

- travel and projects not covered under Category A through C and/or purchase of lab equipment and/or teaching aids

The award(s) will be granted by the Senate Undergraduate Awards Adjudication Committee on the nominations of the funding council and the director of the School of Engineering Science.

**Engineering Undergraduate Student Society Award**

Program code: UEAO-512

Value: \$500

Awarded: fall, spring

Terms of reference: To an undergraduate students in engineering science who have demonstrated service to the engineering science undergraduate student body. Students must be in good academic standing to apply for the award. Preference will be given to those students who have not previously received the award. Applications for the award should be made to the director of the School of Engineering Science. The application should include a letter from the student or the EUSS discussing the student's involvement in and service to the engineering science student body. In addition, any member of the engineering science undergraduate student body may nominate a recipient to the director of the School of Engineering Science. The director will consult with the EUSS prior to making the recommendation. The award will be made by the Senate Undergraduate Award Adjudication Committee on the nomination of the director of School of Engineering Science.

**G&F Financial Group Annual Awards**

Program code: UPAO-207

Value: \$1000

Awarded: summer

Terms of reference: Granted to undergraduate students in good academic standing who are enrolled at any Simon Fraser University campus in either the Faculty of Business Administration, Faculty of Arts and Social Sciences, or Faculty of Applied Sciences. Awards will be granted on the basis of demonstrated service to the Simon Fraser University community or the community at large. Preference will be given to active members or immediate family of an active member of G&F Financial Group.

**Ken Spencer SFU Business/Engineering Venture Plan Competition**

Program code: UPAO-191

Value: \$100

Awarded: fall

Terms of reference: The Ken Spencer SFU Business/Engineering Venture Plan is organized as part of undergraduate courses offered in both the Faculty of Business Administration (BUS 477), and the Faculty of Applied Sciences (ENSC 201). To ensure that the venture plan includes technical and business aspects, teams must consist of at least one undergraduate student from each of the applied sciences (engineering) and business administration faculties. A management of technology MBA student

with an engineering degree will be selected to assist the course instructors by providing mentorship to the competitors. This mentor will provide technical expertise and guide students as they hone venture plans and polish presentation skills. As part of the courses BUS 477 and ENSC 201, teams of students for both courses (with a minimum of one business student and one engineering student per team) will prepare a business plan to be graded jointly by the two course instructors. Typically, the business plan will comprise 35% of the course grade. At the end of the term in which the courses are offered, the two course instructors will identify the top six business plans to be entered into the jury-adjudicated Ken Spencer Venture Plan competition. Written and oral presentations will be made to the jury who will rank their recommended first, second and third place teams. Once the Venture Plan competition jury has determined their recommendations, the chair of the Venture Plan competition jury will present and discuss the selected winners with the deans of applied sciences and business administration who will forward their nominations to the Senate Undergraduate Awards Adjudication Committee. Of the finalists, three teams will receive prizes: a first prize of \$3000, a second prize of \$1500 and a third prize of \$500. Prize values may change in succeeding years. Winners will be announced at an annual function attended by faculty, students and competition sponsors.

**Triple A Award in Mechatronics**

Program code: UPSO-312

Value: \$1000

Awarded: fall

Terms of reference: Granted annually to an undergraduate student in the Faculty of Applied Sciences at SFU Surrey. The award will go to a student who is in good academic standing with demonstrated leadership skills and/or service to the community. Applications must include a resume outlining the candidate's leadership activities and volunteer service as well as letter(s) of recommendation confirming these activities. Preference will be given to a student enrolled in the Mechatronics program at SFU Surrey. If no suitable candidate is identified, the award may be disbursed to any student in the Faculty of Applied Sciences at SFU Surrey who is in good academic standing with demonstrated leadership skills and/or service to the community.

**VTech Graduation Prize in Engineering Science**

Program code: UEAO-544

Value: \$1000

Awarded: summer

Terms of reference: An annual prize will be awarded to the top engineering science undergraduate student from each calendar year's graduating class who successfully completes their degree with the highest CGPA. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of School of Engineering Science.

**Awards for Arts and Social Sciences Students****Archaeometry Prize**

Program code: UEAO-003

Value: \$280

Awarded: summer

Terms of reference: To an undergraduate or graduate student who has shown exceptional scholarship and an interest in the application of physical science to archaeology. This prize will be awarded by the Senate Undergraduate Awards Adjudication Committee on the nomination of the faculty members involved in archaeometry.

**Jane Austen Society Prize**

Program code: UPAO-132

Value: \$120

Awarded: summer

Terms of reference: To a student for the best essay by an upper level undergraduate student on the subject of Jane Austen, her life, works, or closely related social history. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the recommendation by the Department of English. Applications and/or nominations are to be forwarded to the Dean of Graduate Studies office for adjudication.

**G.A.B.C. Chuck Bayley Memorial Award**

Program code: UEAO-519

Value: \$940

Awarded: fall

Terms of reference: To graduate or undergraduate students, full or part-time, who have, through volunteer or paid work experience, demonstrated an aptitude for, and interest in, the field of gerontology. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the gerontology alumni chapter.

**B.C. Federation of Labour Award**

Program code: UPAO-190

Value: \$500

Awarded: fall

Terms of reference: The award will be given to an undergraduate student with an approved minor in labour studies, on the basis of satisfactory academic performance and involvement in volunteer activities. Candidates should demonstrate their involvement in volunteer activities by providing their resume and cover letter specific to these interests. A representative of the BC Federation of Labour will be invited to meet each award winner. This award is granted by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director of the Centre for Labour Studies.

**Robert C. Brown Award**

Program code: UEAO-195

Value: \$2000

Awarded: summer

Terms of reference: To a student in the Faculty of Arts and Social Sciences who has completed a minimum of 60 units at Simon Fraser University. The recipient will have demonstrated a combination of outstanding academic achievement and outstanding performance or leadership in another endeavor at Simon Fraser University. This may be in athletics, in service to the University, or in representing the University to the community at large. The nominations should include the nominee's résumé and a letter of recommendation from a faculty member in the Faculty of Arts and Social Sciences. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the Faculty of Arts and Social Sciences. Nominations should be forwarded to Financial Aid and Awards office by April 15th.

**Bureau du Quebec Book Prizes in Quebec Studies**

Program code: UPAO-177

Awarded: summer

Terms of reference: To one top ranking undergraduate student and one top ranking graduate student in the Department of French having a concentration in Quebec studies within the department's French-Canadian course offerings, including Quebec literature and/or linguistics. The awards will be made by the Senate Undergraduate Awards Adjudication Committee and the senate graduate awards adjudication committee on the recommendation of the chair, Department of French. The Department of French reserves the right to withhold one or both prizes in any given year.

**The Chan Sisters Foundation Non-Profit Co-op Employment Grant**

Program code: N/A

Awarded: fall, spring, summer

Terms of reference: The grant will subsidize co-op students in the Faculty of Arts and Social Sciences whose next co-op work terms will be in not-for-profit organizations. The Chan Sisters Foundation Non-Profit Co-op Employment Grant will be administered by the director, Work Integrated Learning.

**John Chant Award**

Program code: UEAO-541

Value: \$750

Awarded: summer

Terms of reference: To a student in economics graduating with the highest CGPA. The award will be made by the Senate Undergraduate Awards Adjudication Committee upon a nomination from the chair of the Department of Economics.

**William L. Cleveland Essay Prize in African Middle-Eastern Asian History**

Program code: UEAO-053

Value: \$500

Awarded: summer

Terms of reference: To the author of a superior undergraduate term report or essay on any topic concerning African, Middle-Eastern or Asian history. Special consideration will be given for originality in analysis and treatment of the area. Essays are to be submitted to the Department of History by April 15, and must have been written in one of the three previous terms.

**Consulat General de France in Vancouver Book Prizes in French Studies**

Program code: UPAO-193

Awarded: summer

Terms of reference: The Consulat General de France in Vancouver provides annual book prizes to graduate and undergraduate students in the Department of French based on academic performance. Awards will be made in each of three categories: a graduate student, a graduating undergraduate student and an undergraduate student who has completed at least two terms of French studies. The awards will be made by the Senate Undergraduate Awards Adjudication Committee on the recommendation of the chair, Department of French.

**Criminology Award in Diversity & Public Safety**

Program code: UPAO-194

Value: \$750

Awarded: summer

Terms of reference: An award will be made available to an undergraduate student in criminology, studying the interaction between visible minorities and traditional Canadian crime prevention programs and law enforcement. The award will be granted by the Senate Undergraduate Awards Adjudication Committee, on the nomination of the director of the School of Criminology.

**Criminology Student Association Community Service Award**

Program code: UPAO-208

Value: \$500

Awarded: fall

Terms of reference: Granted to a student in good academic standing with a declared major in criminology. The recipient will have demonstrated outstanding community involvement at Simon Fraser University in the field of criminology, including involvement within the Criminology Student Association. Volunteer service within the field of criminology over the past two years is the primary criterion. Involvement within the CSA will be given priority/preference. Please submit with your volunteer resume, one letter of reference from a volunteer

supervisor, as well as a 250 word paragraph explaining what you feel your largest volunteer contribution has been.

**Paul Delany Graduation Award in English**

Program code: UEAO-058

Value: \$500

Awarded: summer

Terms of reference: Awarded annually to the student graduating with the highest CGPA upon completion of an English major. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the Department of English.

**Al Eisenring Gerontology Award**

Program code: UEAO-041

Value: \$1000

Awarded: fall

Terms of reference: To an undergraduate mature student whose area of study is gerontology. A departmental nomination is required from the chair of gerontology.

**European History Book Prize**

Program code: UEAO-174

Value: \$200

Awarded: summer

Terms of reference: The author of a superior undergraduate term report or essay on any topic concerning European history. Special consideration will be given for originality in analysis and treatment of the area. Essays are to be submitted to the Department of History by April 15th and must have been written in one of the three previous terms. The Department of History awards committee will make a nomination to the Senate Undergraduate Awards Adjudication Committee. The history department will undertake to publicize and adjudicate the essay competition.

**French Cohort Program Exchange Awards**

Program code: UEAO-549

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Available to full-time third year undergraduate students in the French Cohort Program, in good academic standing, who have been accepted to participate in a formal exchange program at a francophone university. The award will be made by the Senate Undergraduate Awards Adjudication Committee, on the recommendation of the Office of Francophone and Francophile Affairs.

**French Cohort Program Language Training Award**

Program code: UUAO-202

Value: \$2300

Awarded: summer

Terms of reference: Awarded to student(s) enrolled in the French Cohort Program at Simon Fraser University to cover the costs associated with attending a French summer language program, of at least four weeks' duration, within an accredited Francophone university or college. Application must be made by letter to the associate director, FASS, Office of Francophone and Francophile Affairs, and must include confirmation of acceptance in a French summer language program within an accredited Francophone university or college, a statement describing the relevance of the language program to the student's academic program at Simon Fraser University and two letters of reference from Simon Fraser University faculty. Consideration will be given to the applicants' GPA, the importance of the language training to the student's program of study, and the letters of reference. Application deadline is March 15th. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the associate director, FASS, Office of Francophone and Francophile Affairs.

**G&F Financial Group Annual Awards**

Program code: UPAO-207

Value: \$1000

Awarded: summer

Terms of reference: Granted to undergraduate students in good academic standing who are enrolled at any Simon Fraser University campus in either the Faculty of Business Administration, Faculty of Arts and Social Sciences, or Faculty of Applied Sciences. Awards will be granted on the basis of demonstrated service to the Simon Fraser University community or the community at large. Preference will be given to active members or immediate family of an active member of G&F Financial Group.

**Institute for the Humanities Travel-Study Award**

Program code: UPAO-200

Value: \$1500

Awarded: spring, summer

Terms of reference: Awarded to a third or fourth year student(s) who have completed two humanities courses. Application must be made by March 15th by letter to the director, Institute for the Humanities, and must include a resume, a copy of university transcript, a statement describing the relevance of the program/field school to the student's academic program and goal and two letters of reference from Simon Fraser University faculty. Consideration will be given to the applicants' GPA, the importance of the field school to the student's program of study, and the letters of reference. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, Institute for the Humanities.

**Jack Knetsch Award**

Program code: ueao-542

Value: \$750

Awarded: summer

Terms of reference: To the student with the best essay in the economics honors thesis course. The award will be made by the Senate Undergraduate Awards Adjudication Committee upon a nomination from the chair of the Department of Economics.

**Nick Kravariotis Memorial Scholarship in Hellenic Studies**

Program code: UEAO-200

Value: \$500

Awarded: summer

Terms of reference: Granted to a student with the highest GPA in intermediate modern Greek language. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, Hellenic studies.

**Betty Lambert Memorial Prize**

Program code: UEAO-014

Value: \$300

Awarded: summer

Terms of reference: To an undergraduate student enrolled in at least nine units. The prize will be based upon the best unpublished play submitted. Students must apply to the Department of English by February 15th. The endowment fund is established in memory of Betty Lambert.

**Evelyn Lett Award in Women's Studies University Women's Club of Vancouver**

Program code: UPAO-196

Value: \$1300

Awarded: fall, spring, summer

Terms of reference: The award is available to a student who is enrolled in a women's studies major or joint major, women's studies minor, women's studies extended minor or gender studies minor. Preference will be given to those students who have contributed to the Department of Women's Studies and/or to women's issues on campus or in the community. Students should document their community service in a letter and resume along with their application

package. The award is granted by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair, women's studies.

#### **Cliff Lloyd Memorial Award**

Program code: UEAO-016

Value: \$1500

Awarded: summer

Terms of reference: To an honors student in economics graduating with the highest CGPA. The awards will be made by the Senate Undergraduate Awards Adjudication Committee upon a nomination from the chair of economics.

#### **Stephen McIntyre Book Prize in History**

Program code: UPAO-018

Value: \$400

Awarded: summer

Terms of reference: To the top graduating student in history in recognition of academic excellence on the nomination of the department of history awards committee.

#### **Richard Morgan Memorial Book Prize**

Program code: UEAO-038

Value: \$300

Awarded: summer

Terms of reference: To an undergraduate student who submits a superior term report or essay on any topic concerning Canadian Native history. Special consideration will be given for originality in analysis and treatment of the area. Essays are to be submitted to the history department by April 15, and must have been written in one of the three previous terms. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the Department of History awards committee.

#### **Ingrid Nystrom Archaeology Award**

Program code: UEAO-180

Value: \$1800

Awarded: spring

Terms of reference: To an undergraduate student majoring in archaeology to further studies in archaeology or physical anthropology. Please consult the Department of Archaeology for further details and application procedures by November 1st.

#### **Margaret Ormsby History Prize**

Program code: UEAO-521

Value: \$275

Awarded: summer

Terms of reference: For the best essay written by an undergraduate upper level student enrolled in a Canadian history course at Simon Fraser University. Special consideration will be given for originality in analysis and treatment of the subject. Essays are to be submitted to the Department of History by April 15th, and must have been written in one of the three previous terms. The prize will be granted by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair of the Department of History.

#### **Rosslyn and Mary Penney Community Service Award**

Program code: UEAO-548

Value: \$1000

Awarded: summer

Terms of reference: Granted annually on the basis of good academic standing and leadership and/or service at Simon Fraser University to an undergraduate student in the Faculty of Arts and Social Sciences in his/her second, third or fourth year of study. Preference will be given to students with disabilities who experience issues accessing the physical environment. Applications packages must include a resume outlining the candidate's leadership activities and volunteer service as well as letter(s) of recommendation confirming these activities. Nominations or applications should be forwarded to Financial Aid and Awards by April 15th.

#### **Philippa Polson Memorial Prize in English**

Program code: UEAO-059

Value: \$300

Awarded: summer

Terms of reference: To a student for the best English honors essay completed during the previous three terms. Graduated students, part-time students, as well as those still completing a degree, are eligible. The selection committee, composed of the Department of English undergraduate committee, will consider all essays completed during the year. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair, Department of English.

#### **Psychology Alumni Honors Prize**

Program code: UEAO-037

Value: \$500

Awarded: summer

Terms of reference: To a student enrolled in psychology 490/499. The award will be based on the quality of research conducted for the honors project. The recipient will be expected to give a talk on his/her research at the Department of Psychology's annual convention. Both graduates and undergraduates are eligible. Awards will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair of the Department of Psychology.

#### **Rama Reddy Political Science Award**

Program code: UEAO-527

Value: \$400

Awarded: summer

Terms of reference: To the top graduating student in political science. The awards will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair of the Department of Political Science.

#### **Simon Fraser University Gold Medal and Prize In History**

Program code: UPAO-026

Awarded: summer

Terms of reference: The Department of History wishes to recognize and encourage academic excellence with the award of a medal to the best history student in each graduating year. The award will be based on the best grade point average for upper level work. The prize will be granted by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair of the Department of History.

#### **Simons Student Citizenship Program and Awards**

Program code: UPAO-202

Value: \$1000

Awarded: spring

Terms of reference: Each year (2006-2008), eight students will be selected for participation in the program and be provided with a \$1000 stipend to prepare and deliver a piece of work suitable for publication or performance at a special conference to be organized that year. Paper topics should focus on one or more of the themes of the Institute for the Humanities Imagining Citizenship Project: environment, culture, social justice, religion, the university, modernity. The program is open to all Simon Fraser University graduate and upper level undergraduate students. Students should submit a letter of application together with a one-page abstract summarizing the proposed topic and approach, a resume, a sample of written work (no more than six pages) and a transcript to the Institute for the Humanities by March 31 each year. Successful applicants will be notified by April 30. Awards will be made by the Senate Undergraduate Adjudication Committee based on the nomination of the subcommittee of the Institute for the Humanities' steering committee.

#### **Robert L Stanfield Book Prize**

Program code: UEAO-028

Value: \$100

Awarded: summer

Terms of reference: To outstanding graduating students in political science. Awards will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair of the Department of Political Science.

#### **Prize of the Ambassador of Switzerland in Canada**

Program code: UPAO-022

Awarded: summer

Terms of reference: To students in their final year with the highest grades in German and French languages on recommendation by the departments.

#### **Winnie Topping Memorial Prize**

Program code: UEAO-032

Value: \$190

Awarded: summer

Terms of reference: To a female student in honors anthropology or sociology who shows the greatest promise of becoming both a scholar and a humanitarian. Applicants must submit a letter of nomination from a faculty member of the Department of Sociology and Anthropology.

#### **Brian Williamson Memorial Award in Archaeology**

Program code: UEAO-515

Value: \$1250

Awarded: spring

Terms of reference: To a student who has declared a major in archaeology, is enrolled in a minimum of 9 units (not necessarily in archaeology) when application is made, and intends to use the award to help defray travel costs to participate in field research in archaeology or physical anthropology. The award will be based on use of the award, academic achievements, and relevance of travel to the applicant's academic career. Applications should be sent in writing to the chair, Department of Archaeology. The application should include evidence that the student is an archaeology major in good academic standing, a copy of the most recent transcript, a statement describing how the award will be used, and any other relevant information that will aid the committees in their decision. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the Department of Archaeology undergraduate awards committee.

#### **Awards for Business Administration Students**

##### **Peter R.B. Armstrong/Rocky Mountaineer Award for Entrepreneurship**

Program code: UEAO-051

Value: \$4000

Awarded: fall

Terms of reference: Granted to third or fourth year students in the Faculty of Business Administration who have evidenced or achieved some level of entrepreneurial activities. Applications should include a letter discussing the student's interest and involvement in entrepreneurial activities.

##### **Ryan Beedie Annual Community Service Award in Business**

Program code: UPAO-212

Value: \$5000

Awarded: summer

Terms of reference: Awarded on the basis of good academic performance and leadership and or service at Simon Fraser University to a student enrolled in the Faculty of Business Administration. The student's leadership or service may be to the University community or by representing the University to the community at large. Applications packages must

include a resume outlining the candidate's leadership activities and volunteer service as well as letter(s) of recommendation confirming these activities. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of Faculty of Business Administration.

#### **Samuel Belzberg Award of Excellence in Finance**

Program code: UEAO-035

Value: \$500

Awarded: summer

Terms of reference: To an outstanding graduating student in finance who has also made an important voluntary contribution to the University community or who has otherwise demonstrated leadership and management capability. The award is supported by The Diamond Fund in Business. A departmental nomination is required.

#### **Business Administration Students Endowment Fund Prizes**

Program code: UEAO-006

Value: \$100

Awarded: summer

Terms of reference: To the two finalists in the dean's medal competition. Students will be chosen by the dean of business administration.

#### **Dean's Student Service Award**

Program code: UUAO-200

Awarded: spring

Terms of reference: In 1995, the dean of the Faculty of Business Administration established the Dean's Student Service Award. The purpose of the award is to recognize outstanding service in the university community by an undergraduate student in the Faculty of Administration. The Dean's Student Service Award will be awarded annually in the spring term to recognize service in the preceding calendar year. The award, an engraved plaque and a gift, will be granted to a student, approved in a business program, who has been nominated by the executive of a Faculty of Business Administration student club as their most valuable member. The student should have a minimum CGPA of 3.0 and must have been active in one of the student clubs in two of the three terms in the preceding year. The award will be made by the Senate Undergraduate Award Adjudication Committee on the nomination of the dean, Faculty of Business Administration.

#### **Ernst & Young Chartered Accountants Accounting Award**

Program code: UPAO-197

Value: \$2000

Awarded: fall

Terms of reference: To a third or fourth year student in business administration with an approved accounting concentration who is in good academic standing. The award will be made on the basis of involvement in volunteer and leadership activities. Applicants must supply documentation to demonstrate their involvements.

#### **G&F Financial Group Annual Awards**

Program code: UPAO-207

Value: \$1000

Awarded: summer

Terms of reference: Granted to undergraduate students in good academic standing who are enrolled at any Simon Fraser University campus in either the Faculty of Business Administration, Faculty of Arts and Social Sciences, or Faculty of Applied Sciences. Awards will be granted on the basis of demonstrated service to the Simon Fraser University community or the community at large. Preference will be given to active members or immediate family of an active member of G&F Financial Group.

#### **Barry Macdonald Award in Business Administration**

Program code: UEAO-525

Value: \$2000

Awarded: summer

Terms of reference: Awarded annually to students who: demonstrate outstanding academic achievement while enrolled in the Faculty of Business Administration; are registered in a term exchange, co-op work placement, field school or dual degree program, and; demonstrate exceptional community service. Where possible, preference will be given to students enrolled in an exchange, co-op work placement, field school or dual degree program in Asia. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination from the Faculty of Business Administration.

#### **William K. McCourt and TEC Canada Awards in Business**

Program code: UEAO-543

Value: \$850

Awarded: spring

Terms of reference: To students who have demonstrated a serious interest in the business issues at the undergraduate level. Financial need may be taken into consideration. By the end of September each year, the undergraduate program in the Faculty of Business Administration will identify the business issue for the essay. The essay can be a maximum of 10 pages, double spaced. The application and essay must be received by the executive director of the undergraduate program by January 31 of the subsequent term. Awards will be disbursed annually in the spring term. The award will be made by the Senate Undergraduate Awards Adjudication Committee based upon nomination from the dean, Faculty of Business Administration.

#### **SFU Accounting Student Association Award**

Program code: UPAO-181

Value: \$300

Awarded: spring

Terms of reference: To a third or fourth year student in the Faculty of Business Administration with a concentration in accounting. The award is based on academic performance and extra-curricular involvement. The successful applicant should have a minimum CGPA of 3.0. Extra-curricular interests can include active memberships in clubs, volunteer experiences, sports activities and community involvement. Candidates should demonstrate their involvement in these activities by providing their resume and cover letter specific to these interests.

#### **Ken Spencer SFU Business/Engineering Venture Plan Competition**

Program code: UPAO-191

Value: \$100

Awarded: fall

Terms of reference: The Ken Spencer SFU Business/Engineering Venture Plan is organized as part of undergraduate courses offered in both the Faculty of Business Administration (BUS 477), and the Faculty of Applied Sciences (ENSC 201). To ensure that the venture plan includes technical and business aspects, teams must consist of at least one undergraduate student from each of the applied sciences (engineering) and business administration faculties. A management of technology MBA student with an engineering degree will be selected to assist the course instructors by providing mentorship to the competitors. This mentor will provide technical expertise and guide students as they hone venture plans and polish presentation skills. As part of the courses BUS 477 and ENSC 201, teams of students for both courses (with a minimum of one business student and one engineering student per team) will prepare a business plan to be graded jointly by the two course instructors. Typically, the business plan will comprise 35% of the course grade. At the end of the term in which the courses are offered, the two course instructors will identify the top six business

plans to be entered into the jury-adjudicated Ken Spencer Venture Plan competition. Written and oral presentations will be made to the jury who will rank their recommended first, second and third place teams. Once the Venture Plan competition jury has determined their recommendations, the chair of the Venture Plan competition jury will present and discuss the selected winners with the deans of applied sciences and business administration who will forward their nominations to the Senate Undergraduate Awards Adjudication Committee. Of the finalists, three teams will receive prizes: a first prize of \$3000, a second prize of \$1500 and a third prize of \$500. Prize values may change in succeeding years. Winners will be announced at an annual function attended by faculty, students and competition sponsors.

#### **Awards for Communication, Art and Technology Students**

##### **Noel Archambault Memorial Award in Film**

Program code: UEAO-050

Value: \$1300

Awarded: summer

Terms of reference: Granted to an undergraduate student in the School for the Contemporary Arts, film major program whose fourth year film/video project best invokes Noel Archambault's spirit of independence, innovation and technical ingenuity. The award will be adjudicated on the basis of the proposal for their upcoming fourth year film or video project that the film major students present at the conclusion of their third year in the film program. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School for Contemporary Arts.

##### **Bice Caple Awards**

Program code: UUAO-005

Value: \$1000

Awarded: fall

Terms of reference: To students who have made outstanding contribution to the fine arts at Simon Fraser University during the previous year.

During the tenure of the award each recipient must:

- be an enrolled student at Simon Fraser University
- pursue a course of studies and demonstrate academic competence
- continue to be active in arts at Simon Fraser University

Normally, the award may be held only once, but in no case may an individual receive the award more than twice. Each recipient will be nominated by the director of the School of the Contemporary Arts, the award of \$1,000 will be disbursed in two equal installments, one in the fall term and one in the spring term.

##### **Communication Alumni Endowment Award**

Program code: UEAO-155

Value: \$1200

Awarded: summer

Terms of reference: To a third or fourth year undergraduate student in communication who submits the best essay in the field of communication. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School of Communication.

##### **Simon Fraser University Service Awards (Contemporary Arts)**

Program code: UUAO-000

Value: \$100

Awarded: fall, spring, summer

Terms of reference: To students in the School for Contemporary Arts who have made a significant contribution in their field of study. Candidates must have been enrolled in a minimum of six units (hours with a calculated GPA) with satisfactory academic standing in the qualifying term of contribution.

Graduate students may also be recognized for these awards. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School for Contemporary Arts.

#### **Marcia Scholarship in Electroacoustics**

Program code: UEAO-130

Value: \$300

Awarded: summer

Terms of reference: To a graduate or undergraduate student from any discipline who shows promise and/or excellence in the field of electroacoustics, whether for composition, research, performance or production. A department nomination is required.

#### **Gerald and Sheahan McGavin Award**

Program code: UEAO-056

Value: \$1500

Awarded: summer

Terms of reference: To undergraduate students in the School for the Contemporary Arts based on demonstrated volunteer involvement in community service and academic merit. The application must include a detailed discussion of the student's volunteer involvement in community activities. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School for the Contemporary Arts.

#### **Sean McLeod Memorial Award in Music**

Program code: UPAO-180

Value: \$500

Awarded: fall

Terms of reference: To an undergraduate student in the School for the Contemporary Arts majoring in music. The successful applicant will be a full-time student who achieved a GPA of 2.8 or more in their previous terms of full-time studies at Simon Fraser University. Preference, when possible, will be given to students who have returned to full-time studies subsequent to a substantial interruption of their academic career after secondary school. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School for Contemporary Arts.

#### **Orangecorporation Annual Award in Visual Arts**

Program code: UPAO-206

Value: \$400

Awarded: summer

Terms of reference: To a student in good academic standing in his or her fourth year of study in the visual arts major program. The award will be awarded to a student who demonstrates a high degree of ambition within his/her chosen medium and interests, and who's practice to date exploits the interdisciplinary, self-motivated, and liberal nature of the visual arts program at Simon Fraser University. The award will be granted by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director of the School for the Contemporary Arts.

#### **Helen Pitt Graduating Award in Visual Arts**

Program code: UPAO-189

Value: \$1000

Awarded: summer

Terms of reference: The Helen Pitt Graduating Award in Visual Arts will be awarded in the summer term to a graduating student with an approved major or extended minor in visual arts. The award will be given by the Senate Undergraduate Awards Adjudication Committee on the nomination of the school for the contemporary arts visual arts committee.

#### **Radio Station CHMB AM1320 Award in Communication**

Program code: UEAO-523

Value: \$1600

Awarded: spring

Terms of reference: Available to a student enrolled in the communications honors program to assist with the

cost of completing the honors project. Preference will be given to a multi-lingual student whose honors project addresses issues regarding the diversity of languages and cultures in the Greater Vancouver area with a focus on the role of the mass media, preferably radio. Applications should be submitted to the School of Communication by January 2. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School of Communication.

#### **Rogers Communications Inc. Award in Communication**

Program code: UEAO-120

Value: \$2300

Awarded: spring

Terms of reference: To a student enrolled in the communications honors program to assist with the cost of completing the honors project. Preference will be given to a student whose honors project addresses recent issues in communication (e.g. relating to television or to the production of a video). Applications should be submitted to the School of Communication by January 2. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School of Communication.

#### **F.W. Sullivan Visual Arts Award**

Program code: UEAO-029

Value: \$100

Awarded: summer

Terms of reference: To a student majoring in the Centre for the Arts visual arts program. The award will be based upon a student's contribution to the visual arts and the financial need associated with the public exhibition of his or her work. Nominations will be forwarded from the Centre for the Arts to the Senate Undergraduate Awards Adjudication Committee.

#### **Takao Tanabe Annual Undergraduate Award in Visual Arts**

Program code: UPAO-205

Value: \$2000

Awarded: summer

Terms of reference: To a student in good academic standing going into his or her fourth year of study in the visual arts concentration of the School for the Contemporary Arts. The award will be by departmental nomination for the student who shows the strongest promise in visual arts. The award will be made by the Senate Undergraduate Awards Adjudication Committee based upon the nomination of the director, School for the Contemporary Arts.

#### **Volunteers of the Burnaby Art Gallery Award in Visual Arts**

Program code: UEAO-046

Value: \$750

Awarded: summer

Terms of reference: To the most promising student in third year in the visual arts major program. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the School for the Contemporary Arts departmental awards committee.

#### **Zoe Award in Painting or Sculpture**

Program code: UPAO-192

Value: \$500

Awarded: summer

Terms of reference: To an undergraduate student in the School for the Contemporary Arts, who is in the final year of study for the production of work that uses contemporary painting or sculpture in an innovative and challenging way. Student recipients will be invited to meet Robert Wilson at a luncheon hosted by University Advancement. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School for the Contemporary Arts.

### **Awards for Education Students**

#### **Dr. Maxwell A. Cameron Memorial Medals and Prize**

Program code: UPAO-007

Value: \$250

Awarded: summer

Terms of reference: Granted to students in the Faculty of Education, one to a student in the elementary or middle school stream, and another to a student in the secondary stream. The prizes will be given in the summer term to the outstanding student in each stream based on his/her academic accomplishments and overall performance during the completion of the Professional Development Program practica. The prizes commemorate the distinguished life and work of Dr. Maxwell A. Cameron (1907-1951), first director of the School of Education at the University of British Columbia and author of the Cameron Report on Education. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the dean, Faculty of Education.

#### **Aleta Iberg Annual Memorial Award in the Faculty of Education**

Program code: UPAO-215

Value: \$1000

Awarded: summer

Terms of reference: Established in 2009 in memory of Aleta Iberg and to honour Aleta's passion for teaching and commitment to education. The award will be granted annually from 2009-2011. Preference will be given to a student enrolled in the Professional Development Program who graduated from the Surrey School District #36. This award is intended to provide an opportunity to a student enrolled in the Professional Development Program in the Faculty of Education who possesses some of the qualities that were hallmarks of Aleta Iberg's life: passion for education and teaching, and willingness to learn from her students. The student must be nominated by the Director of Professional Program Development to the Dean of the Faculty of Education. The nomination must be accompanied by a statement, no more than one page in length which addresses the applicant's suitability for the award and exemplifies qualities that were hallmarks of Aleta Iberg's life and personality. The award will be granted by the Senate Undergraduate Awards Adjudication Committee on the recommendation of the Dean of Education.

#### **Claude E. Lewis Award**

Program code: UEAO-015

Awarded: summer

Terms of reference: Granted in the fall or spring term to each of two students who have demonstrated excellence in overall performance during completion of the Professional Development Program in the Faculty of Education. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the dean, Faculty of Education.

#### **Professional Development Program Awards of Excellence**

Program code: UUAO-003

Value: \$500

Awarded: summer

Terms of reference: Awarded in recognition of excellence in overall performance during the Professional Programs practica and course work as well as for demonstrated potential and future professional growth. The awards will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the dean, Faculty of Education.

#### **University Women's Club of Vancouver Laura Tripp Award**

Program code: UEAO-054

Value: \$1000

Awarded: summer



Terms of reference: Awarded to a student who has demonstrated excellence in overall performance during completion of the Professional Development Program. Preference will be given to a student who has completed the program at an external site outside of the Lower Mainland region.

## Awards for Science Students

### Archaeometry Prize

Program code: UEAO-003

Value: \$280

Awarded: summer

Terms of reference: To an undergraduate or graduate student who has shown exceptional scholarship and an interest in the application of physical science to archaeology. This prize will be awarded by the Senate Undergraduate Awards Adjudication Committee on the nomination of the faculty members involved in archaeometry.

### Biological Sciences Merit Award

Program code: UESO-205

Value: \$1450

Awarded: fall

Terms of reference: To a biology major who has the highest academic record at the conclusion of the sixth term of study or the equivalent thereof. A student may receive this award only once during their undergraduate career. Awarded upon nomination of the Department of Biological Sciences.

### Biological Sciences Undergraduate Research Award

Program code: UEAO-061

Value: \$500

Awarded: spring

Terms of reference: The award will be granted based on research work carried out as an undergraduate. Written work, such as an independent study term report, undergraduate research (BISC 498 or 499) report, a published paper, or submitted manuscript is especially valuable in the deliberations for this award, but any evidence of strong research ability will be considered. Generally, the research must have been carried out at Simon Fraser University during the previous two years. Work carried out as part of a larger research effort (e.g. while working in a Simon Fraser University faculty member's group) is eligible. To apply, write a cover letter explaining the research and your role in it, and append a copy of the reports or other material. (These will be returned.) Solicit a letter of reference from the Simon Fraser University faculty member who supervised or was closest to the work. Consideration will be given to the applicant's outstanding research potential, letters of reference and CGPA. A student may receive this award only once during their undergraduate career. Submit application to the biological sciences scholarship committee by January 30. The award will be made by the Senate Undergraduate Awards Adjudication Committee upon the recommendation of the biological sciences department scholarship committee.

### Chemistry Book Award - Dr. E.J. Wells

Program code: UEAO-008

Value: \$80

Awarded: summer

Terms of reference: Awarded to graduating students in chemistry, chemical physics or biochemistry for outstanding graduation grade point average. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the Department of Chemistry.

### Dean of Science Award

Program code: UEAO-009

Value: \$240

Awarded: fall

Terms of reference: Awarded on the basis of academic merit to a student in the Faculty of Science,

who has completed a minimum of 90 units in a major or honors degree program. The prize will be based upon the student's cumulative GPA in the previous two terms of full-time study at Simon Fraser University (at least 12 term units in each term) and the nominee will be nominated by the Faculty of Science undergraduate curriculum committee.

### Greater Vancouver Mining Women's Association Award In Earth Sciences

Program code: UPAO-213

Value: \$500

Awarded: fall

Terms of reference: One award is available to a female undergraduate student pursuing an undergraduate degree with an approved major in earth sciences on the basis of good academic standing and extracurricular involvement. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of chair, Department of Earth Sciences.

### Rudi Haering Award in Physics

Program code: UEAO-013

Value: \$600

Awarded: summer

Terms of reference: On the nomination of the Department of Physics to an outstanding physics or chemical physics undergraduate who has completed six terms of study. A book prize may be included as part of the award. Established by members of the Simon Fraser University Department of Physics in honor and recognition of Dr. R.R. Haering, founding department head and professor, 1964-72.

### Management and Systems Science Prize

Program code: UEAO-040

Value: \$450

Awarded: summer

Terms of reference: The Management and Systems Science Graduation Prize is an annual award valued at approximately 20% of the awardable income from the Management and Systems Science Endowment. The award will be given to an outstanding graduating student who has exhibited leadership through entrepreneurial skills, contribution to the program or contribution to the University in general. To be eligible, a student must be completing his/her degree in the preceding fall term, the spring term of the award, or the summer term following the award. Students may be nominated for the award by faculty members in any of the constituent departments of the MSSC program, the executive of MSSC Student Society or co-op co-ordinators placing MSSC students. The Management and Systems Science Prize provides an annual award valued at approximately 80% of the awardable income from the Management and Systems Science Endowment. Prizes are awarded on the basis of academic excellence to two students with an approved MSSC major or honors program and a minimum CGPA of 3.00. Preference should be given to a student who has not previously received the award. The awards will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the Management and Systems Science Program steering committee.

### Department of Mathematics Awards

Program code: UEAO-017

Value: \$50

Awarded: spring

Terms of reference: Awards will be given to full-time students in the Department of Mathematics on the nomination of the chair, Department of Mathematics. The fund provides support to further mathematics undergraduate education at Simon Fraser University and seeks to encourage secondary school students to enter into the study of mathematics.

### National Bank Financial Award in Kinesiology

Program code: UEAO-533

Value: \$2000

Awarded: fall

Terms of reference: Available in the fall to a student interested in developing a career in the health and fitness industry. Student must have an approved major in kinesiology and have completed 90 units of course work with a CGPA of 3.0 and higher. Candidates must already be in possession of CPR, RFA and preferably, an industrial first aid certification. The successful candidate will work under supervision in the Simon Fraser University Vancouver teaching and research kinesiology lab for a minimum of five hours per week in the awarded term. The suitable candidates on completion of one term of supervised study will be offered an opportunity to work independently as a consultant in the lab. Applications for the award will be received by the director, School of Kinesiology in August each year. Selection will be made and announced on the first of September. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, School of Kinesiology.

### Physics Charter Faculty Prize

Program code: UEAO-055

Value: \$500

Awarded: summer

Terms of reference: The prize will be given annually to the top graduating student in any major or honors physics program on the recommendation of the chair of the Department of Physics. The endowment was established in recognition of physics charter faculty: John F. Cochran, Konrad Colbow, Richard H. Enns, Robert F. Frindt, Rudi R. Haering, David J. Huntley, J.C. Irwin, Klaus E. Rieckhoff and K.S. Viswanathan.

### Putnam Awards

Program code: UPAO-024

Value: \$100

Awarded: spring

Terms of reference: Awarded by the Department of Mathematics to Simon Fraser University students listed as top participants in the William Lowell Putnam Mathematical Competition. The winners will be determined according to the official list provided by the organizers of this competition. The ranking and the financial value of the award are as follows.

Rank	Award
P (Putnam fellow)	\$350
N	\$300
H	\$250
I	\$200
II	\$150
Top 500	\$100

### Department of Statistics and Actuarial Science Awards

Program code: UEAO-018

Value: \$100

Awarded: spring

Terms of reference: Awards will be given to full-time students in the Department of Statistics and Actuarial Science on the nomination of the chair, Department of Statistics and Actuarial Science. The fund provides support for further statistical and actuarial undergraduate education at Simon Fraser University and seeks to encourage secondary school students to enter into the study of statistics and actuarial science.

### Wes Sydor Memorial Co-op Award

Program code: UEAO-063

Value: \$900

Awarded: fall

Terms of reference: To a full-time science and environment undergraduate co-op student who has demonstrated outstanding performance on a Co-operative Education work placement focusing on science projects in any of the last three terms. The award will be given upon the successful completion and return of the co-op student from the work placement. Applicants should submit a resume

outlining their community involvement. Volunteer work through sports organizations will be considered. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, Co-operative Education.

#### **Webber Chemistry Co-op Book Prize**

Program code: UPAO-031

Value: \$50

Awarded: summer

Terms of reference: Awarded to Chemistry students who have completed a co-op term in the year, have demonstrated excellence in their work placement and have the highest CGPA. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the chair, Department of Chemistry.

### **Awards for Student Athletes**

#### **Regulations for Athletic Awards**

The following regulations apply to athletic and recreation awards:

- Students must have achieved a minimum cumulative grade point average (CGPA) of 2.00 in the previous term and must not be on academic probation, or, in the case of a first term or transfer student, must possess an equivalent high school or college standing.
- Undergraduate students must be eligible to compete and be registered in a minimum of nine units of normal graded courses in the term of eligibility. Challenge, audit, and credit-free courses are not considered. Students who enrol in fewer than nine units or subsequently drop below nine hours may have their awards cancelled.
- Graduate students must be eligible to compete and be registered for residence credit in an approved full-time program. Students who do not register or subsequently change to on-leave status may have their awards cancelled.
- Unless otherwise noted, candidates must be nominated by the director, recreation services and athletics.
- Only one intervening term will be allowed between the term in which the registered student made their contribution and the term in which the award is adjudicated.
- Unless otherwise noted, students must be included in the official roster of a varsity team. Specific team membership may be required for individual awards.
- Athletic awards are tenable only at the University for the term indicated on the notice and may not be deferred.
- Funds will be credited to the successful student's account with the University. Outstanding debts to the University will be deducted from the award funds before a cheque for the credit balance is issued.

#### **Bob Ackles Football Award**

Program code: UEAA-001

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a student in good academic standing in any faculty who has demonstrated high standards of leadership and performance as members of the SFU football team. Academic accomplishment may be considered in selection of the recipient.

#### **Yolande D. Anderson Women's Basketball Award**

Program code: UEAA-060

Value: \$800

Awarded: fall, spring, summer

Terms of reference: To a full-time student in good standing who is on the Simon Fraser University women's basketball team and who demonstrates athletic ability in basketball.

#### **G.F. Kym Anthony Wrestling Award**

Program code: UEAA-087

Value: \$700

Awarded: fall, spring, summer

Terms of reference: The award is based on athletic merit in the wrestling program and will be awarded to a full or part-time student in good standing who is a wrestler attending Simon Fraser University.

#### **Tony Antunovic Memorial Award in Football**

Program code: UPAO-021

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: To students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as a member of the varsity men's football team. Academic accomplishment may be considered in selection of the recipient.

#### **Aon Reed Stenhouse Inc. Athletic Award**

Program code: UEAA-034

Value: \$350

Awarded: fall, spring, summer

Terms of reference: Athletes who meet the academic requirements and demonstrate outstanding athletic ability.

#### **C.G. "Chuck" Arnold Golf Award**

Program code: UEAA-002

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Two students who demonstrate outstanding ability in golf and meet the academic requirements. Preference will be given to residents of the Lower Mainland of BC.

#### **Athlete Assistance Awards**

Program code: UUAO-105

Value: \$250

Awarded: fall, spring, summer

Terms of reference: A number of awards are available each term from funds raised by Simon Fraser University athletic teams to assist student athletes in meeting educational costs. Candidates must be members of a Simon Fraser University athletic team and have demonstrated dedication to their sport. Recipients must be enrolled in nine units and maintain a CGPA of 2. Awards will be made by the Senate Undergraduate Awards Adjudication Committee on nominations from the director of Recreational Services and Athletics.

#### **Athletic Entrance Awards**

Program code: UUAO-104

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: Thirty awards valued at \$1,000 are available to students on the basis of demonstrated leadership in an intercollegiate sport. Students must maintain a 2.00 CGPA and be enrolled in nine units during the tenure of award.

#### **Athletic and Recreation Awards**

Program code: UUAO-100

Value: \$700

Awarded: fall, spring

Terms of reference: The purpose of the Athletic and Recreation Awards is to recognize significant contributions to the athletic activities of Simon Fraser University, or to recognize excellence in extraordinary amateur athletic activities. Up to 50 awards valued at \$700 each are available to students who:

- have achieved a minimum grade point average of 2.00 in the previous term and must not be on academic probation, or, in the case of a first term or transfer student, possess an equivalent high school or college standing
- are enrolled in nine or more units of normally graded courses. Students who enrol in less than nine units or subsequently drop below nine units may have their awards cancelled

Nomination will be made by the director of Recreational Services and Athletics to the Senate Undergraduate Awards Adjudication Committee.

#### **Bank of Nova Scotia Football Award**

Program code: UEAA-003

Value: \$300

Awarded: fall, spring, summer

Terms of reference: To a student enrolled in a program of study in any faculty at Simon Fraser University demonstrating outstanding ability in football, as well as proven academic achievement. This \$3,000 self-perpetuating athletic award has been established by the Bank of Nova Scotia.

#### **BC Athlete Assistance Program**

Program code: UXAA-001

Value: \$250

Awarded: fall, spring

Terms of reference: The BC Athlete Assistance Program is an athlete-centred program of financial assistance administered by the Sport Branch of the Ministry of Small Business and Economic Development. The program seeks to recognize and support high performance BC athletes striving to represent the province of BC and Canada in athletic competition. Awards will be allocated to athletes based on their demonstrated potential to high performance sport and academic excellence, their commitment to high performance sport based on minimum eligibility criteria.

#### **BC Lions Football Award**

Program code: UEAA-004

Value: \$100

Awarded: fall, spring, summer

Terms of reference: The award will be given to student in good academic standing in any faculty who has demonstrated high standards of leadership and performance in playing on the varsity football team. Preference will be given to students with high academic standing.

#### **BCTV Broadcasting System Ltd Athletic Award**

Program code: UEAA-015

Value: \$500

Awarded: fall

Terms of reference: To students who meet the athletic requirements and have satisfactory academic standing.

#### **BC Wrestling Association Alumni Award**

Program code: UEAA-022

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To students who exhibit exceptional ability in wrestling and meet the academic requirement.

#### **British Columbia Wrestling Association Award for Women's Wrestling**

Program code: UEAA-113

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as members of the Simon Fraser University women's wrestling team. Academic performance may be considered in the selection of the recipient.

#### **Beedie Construction Company Ltd (Keith & Betty Beedie) Award in Women's Softball**

Program code: UEAA-032

Value: \$600

Awarded: fall, spring, summer

Terms of reference: To a student in any faculty who is a member of the SFU women's softball team and is in good academic standing.

#### **David Beneteau Wrestling Awards**

Program code: UEAA-093

Value: \$450

Awarded: fall, spring, summer

Terms of reference: One or more awards will be given to a full-time student(s) who is/are in good academic

standing in any faculty and is/are a member of the varsity men's wrestling team. High standards of leadership, athletic performance and academic accomplishment may be considered in selection of the recipient. The recipient should be a member in good standing with the British Columbia Amateur Wrestling Association. Preference, when possible, will be given to at least one student who comes from the province of Ontario. Confirmation of this latter condition may be in writing by the student and/or Simon Fraser University head wrestling coach.

#### **Best Facilities Services Ltd Athletic Award**

Program code: UEAA-017

Value: \$250

Awarded: fall, spring, summer

Terms of reference: An athlete who meets the academic requirements and exhibits outstanding ability.

#### **John Buchanan Men's Soccer Award**

Program code: UEAA-106

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: To an undergraduate student in any faculty in good academic standing who is a member of the men's soccer team. A letter of recommendation from the head soccer coach is required.

#### **Buster's Towing, Angus Anthon MacLennan Award in Golf**

Program code: UEAA-105

Value: \$500

Awarded: fall, spring, summer

Terms of reference: The award will be given an undergraduate student in good academic standing who has demonstrated high standards of leadership and performance as a team member of the varsity golf team. The award will be made by the Senate Undergraduate Awards Adjudication Committee upon the recommendation of the director, recreational services and athletics.

#### **Canadian National Railways Athletic Award**

Program code: UEAA-005

Value: \$75

Awarded: fall, spring, summer

Terms of reference: To a student who is enrolled in a program of study in any faculty at Simon Fraser University and who exhibits outstanding ability in the sport of football, as well as proven academic achievement. This self-perpetuating athletic award has been established by Canadian National Railways.

#### **Carrera Alumni Award in Wrestling**

Program code: UEAA-019

Value: \$1000

Awarded: fall, spring

Terms of reference: To a student active in wrestling at Simon Fraser University who meets the athletic and academic requirements. Preference will be given to a Centennial Senior Secondary School graduate.

#### **Jim Ciccone Men's Basketball Award**

Program code: UEAA-084

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: To a full or part-time student in good standing who is attending Simon Fraser University and is on the basketball team. Preference, when possible, will be given to Simon Fraser University students from Northern BC, or to students from BC. The award is based on athletic merit in the men's basketball program.

#### **Clansmen Athletic Alumni Society Award**

Program code: UPAA-013

Value: \$500

Awarded: fall

Terms of reference: Provides for annual award(s) to entering or continuing students who are involved in

the intercollegiate football program and demonstrate outstanding ability in the sport of football.

#### **Coca-Cola Student Athlete Awards**

Program code: UPAA-018

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To students who are members of a varsity athletic team at Simon Fraser University. Awards may be granted in any term. The recipients must be in good academic standing.

#### **Moira Colbourne Field Hockey Award**

Program code: UEAA-018

Value: \$800

Awarded: fall, spring

Terms of reference: The awards will be given to students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as team members of the women's field hockey team. Academic accomplishment may be considered in selection of the recipient.

#### **Credit Union Central of British Columbia Athletic Award**

Program code: UEAA-016

Value: \$200

Awarded: fall, spring, summer

Terms of reference: Annual award of approximately \$300 to a student who is enrolled in a program of study in any faculty at SFU and who exhibits outstanding ability as well as proven academic achievement.

#### **W. Lorne Davies Senior Graduation Award**

Program code: UEAA-079

Value: \$1000

Awarded: spring

Terms of reference: To a senior Simon Fraser University varsity athlete with at least 90 units of which 48 units are at Simon Fraser University. The recipient will have completed their senior year of athletic eligibility as identified by the NAIA. The award will be announced at the March awards banquet and will be granted to an enrolled student in the summer, fall or spring term to offset the tuition costs of the graduation year. The award must be granted within one year of notification. The W. Lorne Davies Senior Graduation Award's purpose is to fulfill the philosophy of W. Lorne Davies that all varsity athletes should achieve graduation.

#### **W. Lorne Davies Athletic Excellence Award**

Program code: UEAA-080

Value: \$2000

Awarded: spring

Terms of reference: The outstanding male and the outstanding female varsity athlete of the year. Two awards may be given in either category if there are two equal candidates. Recipients must be full-time students. The awards will be granted at the Simon Fraser University athletics banquet.

#### **Larry K Davis/Bravo International Services Corp. PNB Award in Golf**

Program code: UEAA-020

Value: \$250

Awarded: fall, spring, summer

Terms of reference: To a full-time student in good standing who is on the golf team at Simon Fraser University.

#### **Bill De Vries Athletic Award**

Program code: UEAA-061

Value: \$295

Awarded: fall, spring, summer

Terms of reference: Awards will be given to students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as a member of a varsity team. Academic accomplishment may be considered in selection of the recipient.

#### **Les and Greg Edgelow Wrestling Award**

Program code: UEAA-058

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a first year student (preference given to a student from the BC Interior) in good standing who is on the University wrestling team and who is enrolled full-time. The award is also based on athletic merit in wrestling.

#### **Field Hockey Endowment Fund Awards**

Program code: UEAA-012

Value: \$250

Awarded: fall, spring, summer

Terms of reference: The award will be given to students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as a member of the field hockey team.

#### **Jim Forsythe Olympian Award**

Program code: UEAA-069

Value: \$1000

Awarded: fall, spring

Terms of reference: To a student athlete in any sport who has aspirations to compete in the Olympics. The award will be given to a student in good standing who has shown leadership qualities. The student must submit an application in writing and present their training procedures to the Jim Forsythe Olympian committee by August 30th. This award may be held in conjunction with other awards made by Simon Fraser University or other agencies where permitted by those agencies.

#### **Kelly Franks Memorial Swimming Award**

Program code: UEAA-090

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To student or students on the SFU swimming team who is/are in good academic standing. Preference, when possible, will be given to at least one student who was, or is, active in the British Columbia Summer Swimming Association (BCSSA), either as a participating athlete, coach or volunteer. Confirmation of this latter condition may be in writing by the student and/or Simon Fraser University head swim coach. The recipient may be granted the Kelly Franks Memorial Swimming Award more than once provided criteria noted above are met.

#### **Barbara (Jones) Friesen Award for International Students in Swimming**

Program code: UEAA-118

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Granted to students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as members of the Simon Fraser University swimming team. Academic accomplishment may be considered in selection of the recipient. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, recreational services and athletics.

#### **Frode Strand-Nielsen Award for International Students in Men's Soccer**

Program code: UEAA-116

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To international students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as members of the Simon Fraser University men's soccer team. Academic accomplishments may be considered in selection of the recipient.

#### **Rick Hansen Athletic Award**

Program code: UUAO-103

Value: \$1400

Awarded: fall

Terms of reference: To a physically challenged student athlete who meets the general award requirements.

#### **Dr. T. Peter Harmon Wrestling Award**

Program code: UEAA-048

Value: \$500

Awarded: fall, spring, summer

Terms of reference: The award will be given to a student in good academic standing in any faculty who has demonstrated high standards of leadership and performance as a team member of the varsity wrestling team. Preference will be given to students with high academic standing.

#### **Robert F. Harrison & Partners Athletic Award**

Program code: UEAA-051

Value: \$150

Awarded: fall, spring, summer

Terms of reference: The interest from the endowment will be given each year to an athlete upon the recommendation of the director of athletics.

#### **Wayne Holm Football Scholarship**

Program code: UEAA-023

Value: \$750

Awarded: fall, spring, summer

Terms of reference: To students exhibiting exceptional ability in football and meeting the academic requirements.

#### **Daniel Igali Award in Wrestling**

Program code: UEAA-111

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a student in good academic standing in any faculty who has demonstrated high standards of leadership and performance as a member of the Simon Fraser University wrestling team. Academic performance may be considered in the selection of the recipient.

#### **Indo-Canadian Wrestling Award**

Program code: UEAA-062

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a full or part-time student in good standing. The award is based on athletic merit in wrestling.

#### **Intramural Involvement Award**

Program code: UEAA-086

Value: \$50

Awarded: fall, spring, summer

Terms of reference: To a full or part-time student in good standing who is attending Simon Fraser University and who volunteers with the intramural program.

#### **Mike Jones Wrestling Award**

Program code: UEAA-053

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: To a part-time or full-time student in good academic standing, based on athletic merit in the wrestling program.

#### **Rick Jones Memorial Award**

Program code: UEAA-007

Value: \$500

Awarded: fall, spring, summer

Terms of reference: One or more awards are available to full-time students in good academic standing. These awards are based on outstanding athletic merit in football. Preference will be given to students from Vancouver Island.

#### **Keg Restaurants Ltd Athletic Award**

Program code: UEAA-026

Value: \$200

Awarded: fall, spring, summer

Terms of reference: An athlete who meets the academic requirements and demonstrates outstanding ability.

#### **Nick Kiniski Wrestling Award**

Program code: UEAA-059

Value: \$500

Awarded: fall, spring, summer

Terms of reference: The award is based on athletic merit in the wrestling program and will be awarded to a full or part-time student in good standing who is a wrestler attending Simon Fraser University.

#### **Jon-Lee Kootnekoff Basketball Award**

Program code: UEAA-029

Value: \$900

Awarded: fall, spring, summer

Terms of reference: To a student in good academic standing from any faculty on the basis of demonstrated high standards of leadership and performance as a member of the varsity men's basketball team. The award will be disbursed over two terms in one academic year with the second disbursement contingent on the student maintaining satisfactory academic standing and athletic performance in the first funded term. Academic accomplishment may be considered in selection of the recipient.

#### **Labatt Breweries Award in Soccer**

Program code: UPAA-003

Value: \$600

Awarded: spring

Terms of reference: Granted to one or more students exhibiting outstanding athletic merit in soccer and maintaining a satisfactory academic standing.

#### **Labatt Breweries of BC Limited Football Awards**

Program code: UEAA-008

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a student who is enrolled full-time in a program of study in any faculty. The awards are based on outstanding ability in football, as well as proven academic achievement.

#### **SFU Lacrosse Endowment Award**

Program code: UEAA-120

Value: \$250

Awarded: fall, spring, summer

Terms of reference: To students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as members of the Simon Fraser University lacrosse club. Academic accomplishment may be considered in selection of the recipient. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, recreational services and athletics.

#### **The Leon J. Ladner Athletic Award**

Program code: UPAA-012

Value: \$250

Awarded: fall, spring, summer

Terms of reference: Granted to a student in any faculty who demonstrates exceptional accomplishment or promise in active competitive sport at Simon Fraser University.

#### **Langford Women's Basketball Award**

Program code: UEAA-112

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a current full-time student in any faculty on the Simon Fraser University women's basketball team. Where possible, preference will be given to a student playing in the point guard position. The award will be disbursed by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, recreational services and athletics.

#### **Darryl "Lumpy" Lawrence Lucas Annual Award in Rugby**

Program code: UPAA-052

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: An annual award will be made to a Simon Fraser University student who plays on the Simon Fraser University men's or women's rugby teams. The award will be granted to the player who best exemplifies sportsmanship and is in good academic standing. Sportsmanship will be defined as a player who assists in achieving goals, boosts team morale, strives for his or her personal best but may not receive the same credit as the top player on the team. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, Recreational Services and Athletics.

#### **McCormack Award for Women Athletes**

Program code: UEAA-117

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Granted in any term to women students in any faculty who participate in a varsity sport. The successful candidates will be in good academic standing. The award is granted by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, recreational services and athletics.

#### **McDonalds Restaurants Athletic Award**

Program code: UEAA-027

Value: \$250

Awarded: fall, spring, summer

Terms of reference: The interest from the endowment will be given each year to an athlete upon the recommendation of the director of athletics.

#### **Ed McDougall Memorial/SFU Softball Alumni Award**

Program code: UEAA-108

Value: \$450

Awarded: fall, spring, summer

Terms of reference: The award will be given to students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as a member of the varsity softball team. Accomplishment may be considered in selection of the recipient.

#### **Allison McNeill Award in Women's Basketball**

Program code: UEAA-107

Value: \$250

Awarded: fall, spring, summer

Terms of reference: Awarded to a Simon Fraser University student in good academic standing who is a member of the Simon Fraser University varsity women's basketball team.

#### **Ronale Sanjay Naidu Foundation Award in Men's Varsity Soccer**

Program code: UPAA-053

Value: \$1500

Awarded: fall, spring, summer

Terms of reference: The award will be given to students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as a member of the men's varsity soccer team. Academic accomplishment may be considered in selection of the recipient. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, Recreational Services and Athletics.

#### **Paul Nemeth Wrestling Award**

Program code: UEAA-030

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: To a student in good academic standing in any faculty who has demonstrated high standards of leadership and performance as a team

member of the varsity wrestling team. Preference will be given to students with high academic standing.

**David and Brenton Nichols Award in Athletics**

Program code: UEAA-092

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a student in good academic standing in the Faculty of Business Administration or School of Communication. The award will be granted to third and fourth year students participating in a competitive sport at the provincial level or higher, or if no such student is available, to a student who is a member of a Simon Fraser University varsity team. Academic performance may be considered in the selection of the recipient.

**Jane Norman Memorial Soccer Award**

Program code: UEAA-110

Value: \$750

Awarded: fall, spring

Terms of reference: The award(s) will be granted to students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as member of the Simon Fraser University women's soccer team. Academic accomplishment may be considered in selection of the recipient. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, recreational services and athletics.

**Northern British Columbia Softball Award in Women's Softball**

Program code: UEAA-085

Value: \$500

Awarded: spring

Terms of reference: To a Simon Fraser University student who is a member of the Simon Fraser University women's intercollegiate softball team. The recipient must also have been a member of one of the sponsoring associations for at least two years, and as well, be in good standing with Softball BC. The award may be renewed as long as the recipient is a member of the Simon Fraser University intercollegiate softball team. Preference will be given to applicants from Northern BC, but the award may be granted to other qualified applicants.

**Lui Passaglia Football Award**

Program code: UEAA-056

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a full or part-time student in good standing who is on the football team at Simon Fraser University. The award is based on athletic merit in football.

**D.B. Perks & Associates Ltd. Award in Swimming and Diving**

Program code: UEAA-041

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a student in any faculty who is a member of the varsity SFU swimming and diving team, exhibiting exceptional ability in swimming and/or diving and is in good academic standing.

**Murray Pezim Award in Football**

Program code: UEAA-050

Value: \$600

Awarded: fall

Terms of reference: To students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as a member of the varsity football team. Academic accomplishment may be considered in selection of the recipient.

**Rae/Suart Alumni Athletic Award in Men's Basketball**

Program code: UEAA-014

Value: \$750

Awarded: fall

Terms of reference: The award(s) will be given to a student on the men's basketball team upon completion of their first year of academic studies at Simon Fraser University.

**Rae/Suart Alumni Athletic Award in Women's Basketball**

Program code: UEAA-049

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: The award(s) will be given to a student on the women's basketball team upon completion of their first year of academic studies at Simon Fraser University.

**Craig Roberts Award in Wrestling**

Program code: UEAA-119

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a student in good academic standing in any faculty who has demonstrated high standards of leadership and performance as a member of the Simon Fraser University varsity wrestling team. Academic performance may be considered in the selection of the recipient. The award will be made by the Senate Undergraduate Awards Adjudication Committee on Scholarships, Awards, and Bursaries on the nomination of the director, recreational services and athletics.

**Royal Canadian Legion Branch #2**

Program code: UEAA-054

Value: \$50

Awarded: fall, spring, summer

Terms of reference: An annual award is available for a student athlete who meets the academic requirements and exhibits athletic ability.

**Royal City Travel Limited Athletic Award**

Program code: UEAA-009

Value: \$200

Awarded: fall, spring, summer

Terms of reference: To athletically gifted students involved in the University's intercollegiate athletic program. The endowment is established by Royal City Travel in recognition of the outstanding achievement of Terry Fox.

**Scotiabank Award in Soccer**

Program code: UPAA-008

Value: \$2000

Awarded: fall, spring, summer

Terms of reference: The award will be disbursed in two installments to an athlete on the soccer team at Simon Fraser University.

**Scotiabank Student-Athlete Awards**

Program code: UPAA-015

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: A number of awards will be offered to both male and female student athletes at Simon Fraser University, up to one award per varsity team. The recipients must be full-time students in good academic standing who demonstrate outstanding ability in varsity athletics.

**Scott Paper Alumni Endowment Award**

Program code: UEAA-013

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Outstanding athletic merit by a student competing for SFU in any sport will be awarded to full-time students with a minimum 2.5 cumulative GPA.

**SFU Rugby Professional Women's Award in Rugby**

Program code: UPAA-022

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To students in good academic standing in any faculty who have demonstrated high

standards of leadership and performance as a member of Simon Fraser University women's rugby team. Academic accomplishment may be considered in selection of the recipient. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, Recreational Services and Athletics.

**Dr. Gordon Shrum Athletic Award**

Program code: UEAA-037

Value: \$800

Awarded: fall, spring, summer

Terms of reference: To an athlete who meets the academic requirements and demonstrates outstanding athletic ability.

**Simon Fraser University Alumni Soccer Award**

Program code: UEAA-063

Value: \$900

Awarded: fall, spring

Terms of reference: To an undergraduate student involved in the University soccer program.

**SFU Athletic Award**

Program code: UEAA-044

Value: \$500

Awarded: fall, spring, summer

Terms of reference: The award will be given to undergraduate student athletes on a varsity team who hold a satisfactory academic standing.

**Simon Fraser University Swimming Alumni Award**

Program code: UEAA-024

Value: \$1200

Awarded: fall, spring, summer

Terms of reference: To students who exhibit exceptional ability in swimming and meet the academic requirements.

**Simon Fraser University "The Challenge" Golf Award**

Program code: UPAA-010

Value: \$2000

Awarded: fall, spring, summer

Terms of reference: Recipient must be a full-time student in good standing and a member of Simon Fraser University's men's varsity golf team. He must be a graduate of Canadian junior golf and maintain throughout his four years of eligibility a level of play comparable with that of the top six team members. If a recipient forfeits year 2-4 portion of the award, the remaining portion may be awarded to another member of the golf team on the nomination of the head golf coach. The award schedule will be as follows: Year 1 - \$5,000, Year 2 - \$4,000, Year 3 - \$3,000, Year 4 - \$2,000.

**Simon Fraser University Women's Soccer Endowment Award**

Program code: UEAA-064

Value: \$100

Awarded: fall, spring, summer

Terms of reference: Based on outstanding athletic merit, to a student playing women's soccer at the University. The award will be granted to a full-time student in satisfactory academic standing.

**David Thomas Smith Annual Memorial Award in Men's Soccer**

Program code: UPAA-023

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: To students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as a member of the varsity men's soccer team. Academic accomplishment may be considered in selection of the recipient. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, Recreational Services and Athletics.

**Softball Associations Presidents' Award in Women's Softball**

Program code: UEAA-081

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a full or part-time student in good standing who is attending Simon Fraser University and who is a member of the Simon Fraser University women's intercollegiate softball team. The recipient must also have been a member of one of the sponsoring associations for at least two years and be in good standing with Softball BC and their sponsoring association. The award may be renewed annually if the athlete remains a member of the SFU women's intercollegiate softball team.

**Sandra Spence Memorial Wrestling Award**

Program code: UEAA-033

Value: \$1500

Awarded: fall, spring

Terms of reference: To students who are members of the Simon Fraser University wrestling team and who meet the academic requirements.

**Victor V. Spencer Award in Football**

Program code: UEAA-046

Value: \$500

Awarded: fall, spring, summer

Terms of reference: The award will be given to students in good academic standing in any faculty who have demonstrated high standard of leadership and performance as a member of the varsity football team. Academic accomplishment may be considered in selection of the recipient.

**Bob Spray Rugby Awards**

Program code: UEAA-025

Value: \$500

Awarded: spring

Terms of reference: Awarded to rugby players enrolled at Simon Fraser University. This award is offered in recognition of significant contributions to the Simon Fraser University rugby team, or in recognition of excellence in extraordinary amateur rugby activities. Students must have achieved a minimum grade point average of 2.00 in the previous term. Applications should be submitted to the Simon Fraser University rugby coach in the previous fall term.

**Mark Staley Award in Men's Basketball**

Program code: UPAA-054

Value: \$2500

Awarded: fall, spring, summer

Terms of reference: To a student who demonstrates outstanding athletic ability as a member of the Simon Fraser University men's basketball team. The award will be disbursed over two terms. It will be awarded by the Senate Undergraduate Awards Adjudication Committee on the recommendation of the men's basketball coach and the director of athletics.

**Stan Stewardson Award in Men's Basketball**

Program code: UEAA-109

Value: \$500

Awarded: fall, spring, summer

Terms of reference: The award(s) will be granted to students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as members of the men's basketball team. Academic accomplishment may be considered in selection of the recipient. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the nomination of the director, recreational services and athletics.

**Student Athlete Support Award**

Program code: UEAA-065

Value: \$250

Awarded: fall, spring, summer

Terms of reference: Awards for student athletes. Must have minimum CGPA of 2.00, must be full-time students, and must be eligible to compete in their sport.

**Annis Stukus Award in Football**

Program code: UEAA-040

Value: \$1000

Awarded: fall, spring

Terms of reference: To a student in good academic standing in any faculty who have demonstrated high standards of leadership and performance as a member of the varsity football team. Academic accomplishment may be considered in selection of the recipient.

**Lynn K. Sully Athletic Award**

Program code: UEAA-010

Value: \$200

Awarded: fall, spring, summer

Terms of reference: To athletes who demonstrate outstanding athletic ability and meet the academic requirements. This endowment will provide two awards, one for football and one for basketball.

**Florence and Lynn Sully Basketball Award in Men's Basketball**

Program code: UEAA-021

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To student in good academic standing in any faculty who has demonstrated high standards of leadership and performance as a team member of the varsity men's basketball team. Academic accomplishment may be considered in selection of the recipient.

**Lynn and Florence Sully Award in Women's Basketball**

Program code: UEAA-043

Value: \$900

Awarded: fall, spring, summer

Terms of reference: To a student in good academic standing in any faculty who has demonstrated high standards of leadership and performance as a team member of the varsity women's basketball team. Preference will be given to students with high academic standing.

**Team Skyline Ltd Athletic Award**

Program code: UEAA-031

Value: \$400

Awarded: fall, spring, summer

Terms of reference: An award is available to an athlete who exhibits outstanding athletic ability as well as maintains satisfactory academic performance.

**Brit Townsend Women's Track and Field Award**

Program code: UEAA-083

Value: \$600

Awarded: fall, spring, summer

Terms of reference: To a full-time student in good academic standing who is on the women's track and field team at Simon Fraser University. Based also on athletic merit in track and field (preferably distance running).

**Barbara J. Towriss Award in Women's Basketball**

Program code: UEAA-039

Value: \$1200

Awarded: fall, spring, summer

Terms of reference: To a student in good academic standing in any faculty who has demonstrated high standards of leadership and performance as a team member of the varsity women's basketball team. Academic accomplishment may be considered in selection of the recipient.

**Jay Triano Basketball Award**

Program code: UEAA-057

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a full or part-time student in good standing. The award is based on athletic merit in basketball to a student who is on the Simon Fraser University basketball team.

**Valley Royals Award in Track and Field**

Program code: UPAA-014

Value: \$2000

Awarded: fall, spring, summer

Terms of reference: To a Simon Fraser University student who exhibits outstanding athletic merit on the Simon Fraser University track and field team and who maintains a satisfactory academic standing. \$2,000 in total will be awarded annually in two installments. Preference will be given to students who are members of the Valley Royals Track and Field Club. If a suitable candidate from the Valley Royals club is not found in a given year, the award may be granted to a student on the Simon Fraser University track and field team who is from the Fraser Valley region (zone 3) that includes Maple Ridge, Langley, Abbotsford, Mission, Agassiz, Coquitlam, Port Coquitlam and Hope. If neither a Valley Royals club member nor a student from zone 3 is available, the award may be granted to a track and field team member from British Columbia or from Canada. The recipient may be granted the Valley Royals award more than one time provided all criteria noted above are met.

**Vancouver Golf Club/MCL Motors Golf Tournament Award in Golf**

Program code: UEAA-066

Value: \$50

Awarded: fall, spring, summer

Terms of reference: Granted to a full-time student in good standing who is on the golf team at Simon Fraser University.

**Vancouver Ski Club Award**

Program code: UEAA-011

Value: \$500

Awarded: fall, spring, summer

Terms of reference: To a student who has a combination of real talent in skiing and satisfactory academic background. Students should seek a nomination through the director of athletics.

**Joe Vieira Award for Swimming**

Program code: UEAA-115

Value: \$800

Awarded: fall, spring, summer

Terms of reference: To students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as members of the Simon Fraser University men's or women's swimming and diving teams. Academic accomplishment may be considered in selection of the recipient.

**Water Polo Award**

Program code: UEAA-082

Value: \$250

Awarded: fall, spring, summer

Terms of reference: The award will be given to students in good academic standing in any faculty who have demonstrated high standards of leadership and performance as a member of the Simon Fraser University women's water polo club and/or the Simon Fraser University men's water polo club.

**West Coast Reduction Ltd Athletic Award**

Program code: UEAA-038

Value: \$600

Awarded: fall, spring, summer

Terms of reference: To a student athlete who exhibits exceptional ability in any intercollegiate sport and maintains a good academic standing.

**White Rock Renegades Women's Softball Awards**

Program code: UEAA-045

Value: \$1000

Awarded: fall, spring, summer

Terms of reference: To a member of the Simon Fraser University women's intercollegiate softball team and must be a student at Simon Fraser University. The recipient must have been a member of the Renegade

softball organization (South Surrey White Rock) for at least two complete seasons.

### Women's Athletic Awards (She Can Play!)

Program code: UEAA-091

Value: \$100

Awarded: fall, spring, summer

Terms of reference: To a female student in good academic standing in any faculty who has demonstrated high standards of leadership and performance in a varsity sport offered through the University.

## Work-Study Program

The Simon Fraser University Work-Study program provides part-time on-campus employment for full-time students.

### Regulations

The following regulations apply to participate in the Work-Study Program.

- Students must have a demonstrated financial need.
- Undergraduate and graduate students, both domestic (Canadian) and international, are eligible to apply.
- Undergraduate students must have a minimum CGPA of 2.00 to be eligible.
- Graduate students in eligible master's or doctoral programs must have a minimum CGPA of 3.00.
- Undergraduate students must be enrolled in a minimum of nine units of normal graded courses in the term of application. Challenge, audit, and credit-free courses will not be considered. Students who enrol in fewer than nine units or subsequently drop below nine units may have their work-study position cancelled.
- Graduate students must be enrolled for residence credit in an approved full-time program. Students who do not enrol or subsequently change to on-leave status may have their work-study position cancelled.
- Domestic (Canadian) students must be approved for government student assistance from their home jurisdiction to be eligible.
- The student must apply using the Simon Fraser University online bursary/work-study application form via the student information system (<http://sis.sfu.ca>). It is the student's responsibility to meet applicable deadlines and supply all required documentation. Incomplete applications may be rejected. Note: some BC students may be identified as eligible candidates through their StudentAid BC application and be notified of this opportunity.

## University Administered Loans

### Student Emergency Loan Fund

#### Regulations

The following regulations govern all loans for continuing students over which the University has jurisdiction.

- Short term emergency funds are available to students who urgently need money while awaiting receipt of other sources of funding.
- Emergency loans are not available for outstanding fees owed to the University.
- Students must have a demonstrated financial need and a secured source of repayment.
- Undergraduate students must be registered in a minimum of nine units of normal graded courses in the term of application. Challenge, audit, and credit-free courses will not be considered.
- Graduate students must be registered for residence credit in an approved full-time program.
- Students must meet with a Financial Aid and Awards advisor. It is the student's responsibility to

supply all requested documentation. Incomplete applications may be rejected.

- Simon Fraser University Emergency Loans are tenable only at Simon Fraser University and only for the term indicated on the notice.

## Externally Administered Scholarships, Awards and Bursaries

Externally administered scholarships, awards and bursaries are not administered by Simon Fraser University and therefore are not listed here. The information which is provided through the Financial Aid and Awards office is intended for general reference only and is subject to change. The student is responsible for enquiring and applying through the appropriate agency. For more information, visit <http://students.sfu.ca/financialaid>.

## Government Administered Programs

### Canadian Armed Forces Subsidization Plans

#### Admission Requirements

An applicant must be a Canadian citizen; be physically fit for enrolment in the Canadian Forces; and be at least 16 years of age on the first day of January of the year the student commences first year studies at the university.

#### How to Apply

Individuals interested in obtaining more information or wishing to apply for any of these plans are requested to contact: Commanding Officer, Canadian Forces Recruiting Centre, 757 West Hastings Street, Vancouver, BC, V6C 1A1.

### Government Loans and Grants

A loan is a repayable sum of money borrowed by a student who demonstrates financial need. A grant is funding that a student is not normally required to repay.

#### Student Loan and Grant Programs

##### BC Residents Studying Full-Time

StudentAid BC assists eligible students with the cost of post-secondary education through loans, grants, bursaries, scholarships and special programs. It also offers programs for students who need help to repay a student loan.

Most StudentAid BC programs are based on need, and provide financial assistance to students and their immediate families who do not have the financial resources to pay for post-secondary education and basic living expenses.

StudentAid BC administers programs on behalf of the Government of Canada including Canada student loans and Canada Student Grants.

For detailed information about available opportunities, eligibility requirements, and how to apply, visit the Student Aid BC website at [www.studentaidbc.ca](http://www.studentaidbc.ca).

##### Out-of-Province Students Studying Full-Time

Students must apply to their province of residence for provincial/territorial funding. On-line applications are available for most provinces. Check the Financial Aid and Awards website at <http://students.sfu.ca/>

[financialaid](http://financialaid) for links to each of the provincial/territorial ministries.

### New 2009/2010 Federal Government Programs

The federal government is improving access to post-secondary education by assisting students and families to manage the cost through new and improved programs including

- a new Canada Student Grant for students from low-income or middle-income families
- more effective support for students with permanent disabilities
- a new Repayment Assistance Plan to help students who have difficulty repaying loans

There are also many other changes for married students, part-time students, and students with dependents. For detailed information, visit the CanLearn website at [www.canlearn.ca](http://www.canlearn.ca).

#### Students Studying Part-Time

Part-time students whose family income falls below established thresholds may be eligible for up to \$1,200 per year in grants and/or up to \$10,000 in part-time Canada Student Loan funding.

For detailed information about eligibility requirements and how to apply, visit the StudentAid BC website at [www.studentaidbc.ca](http://www.studentaidbc.ca) or the CanLearn website at [www.canlearn.ca](http://www.canlearn.ca)

### Program Exceptions to Government Student Loans and Grants

Although the majority of Simon Fraser University programs are eligible for government student loans and grants, some programs do not meet federal and provincial/territorial eligibility criteria (e.g. executive MBA, MEd off-campus, graduate diploma in business administration (GDBA), non-credit continuing studies programs). Contact Financial Aid and Awards to determine if a program is eligible.

### International Students

Students who are not Canadian citizens or Permanent Residents, and who will require financial assistance to attend Simon Fraser University must arrange such assistance in their country of origin before arrival in Canada.

Simon Fraser University permits non-Canadian students to compete for most University administered scholarships and awards at the undergraduate or graduate level, once they have enrolled at the University, on the basis of course work undertaken at Simon Fraser University and/or community service. Bursaries are awarded on the basis of financial need, but only as supplemental funding, not as core funding needed to meet immigration requirements. Students are expected to exhaust all other sources of funding including government aid from their home country before being eligible for bursaries. See the bursary section for details.

It must be stressed that non-Canadian students should not predicate their tuition and living expense estimates upon these sources. Non-Canadian students are expected and required by federal law to have sufficient funds guaranteed for their education prior to arrival in Canada.

### United States Students

Citizens (or eligible non-citizens) of the United States attending the University may apply for funding through the US Department of Education's Federal Family Education Loan (FFEL) program. US students with permanent resident status or dual citizenship may also be eligible to apply for Canadian student loans.

For more information, visit the Financial Aid and Awards website at <http://students.sfu.ca/financialaid>

or the US Department of Education website at [www.studentaid.ed.gov](http://www.studentaid.ed.gov)

### For More Information

For further information on programs offered by Financial Aid and Awards (Student Services) visit <http://students.sfu.ca/financialaid>.

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 Simon Fraser University Seniors Lifelong Learners Society Community Service Award 58  
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 Vancouver Foundation Health Science Bursaries 56  
 Vancouver Golf Club/MCL Motors Golf Tournament Award in Golf 70  
 Vancouver Korean Canadian Scholarship Foundation Scholarship Award 39

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 Vancouver Ski Club Award 70  
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 Zoe Award in Painting or Sculpture 64

# Faculty of Applied Sciences

9861 Applied Sciences Building, 778.782.4724 Tel,  
778.782.5802 Fax, <http://fas.sfu.ca>

## Dean

N. Rajapakse BSc (SLanka), MEng, DEng (AIT),  
PEng

## Associate Dean

F. Popowich BSc (Alta), MSc (S Fraser), PhD (Edin)

## Advisor

Ms. M. Trautman BA, MEd (S Fraser),  
778.782.8795 Tel

The Faculty of Applied Sciences offers programs in computing science, engineering science, general studies, and geographic information science. Bringing together the University's educational and research activities in the applied sciences, the faculty is concerned with major areas of applied science and technology, and human and social aspects of the application of science.

## Undergraduate Degrees Offered

bachelor of applied science (honors)  
bachelor of applied science  
bachelor of arts (honors)  
bachelor of arts  
bachelor of general studies (applied sciences)  
bachelor of science (honors)  
bachelor of science

## Diploma and Certificate Offered

certificate in computing studies  
post baccalaureate diploma in computing science

## Residency Requirements

The University may award substantial transfer credit for course work completed elsewhere. These transfer units reduce the amount of work needed to complete a Simon Fraser University credential, subject to minimum residency requirements for work completed at Simon Fraser University. In addition to University-wide residency requirements, the Faculty of Applied Sciences also defines program-based residency requirements for each of its programs.

Overall, the residency requirements define three conditions that apply to every program offered through the Faculty of Applied Sciences.

- At least half of the program's total units must be earned through Simon Fraser University study.
- At least two thirds of the program's total upper division units must be earned through Simon Fraser University study.
- At least two thirds of the upper division units in the courses of a school offering (or joint offering) a program must be earned through that school at Simon Fraser University.

These conditions apply to all Faculty of Applied Sciences undergraduate degree, post baccalaureate diploma and certificate programs and also apply to major, honors, minor, extended minor and specialist programs that form part of an overall degree program, whether the program is offered by the Faculty of Applied Sciences or by any other faculty.

## School of Computing Science

9971 Applied Science Building, 778.782.4277 Tel,  
778.782.3045 Fax, [www.cs.sfu.ca](http://www.cs.sfu.ca)

## Director

R.D. Cameron BASc, PhD (Br Col)

## Professors Emeriti

T.W. Calvert BSc(Eng) (Lond), MSEE (Wayne), PhD (Carnegie Tech), PEng  
R. Harrop BA, MA, PhD (Camb)  
W.S. Havens BSc, MSc (Virginia), PhD (Br Col)  
T. Kameda BE, ME (Tokyo), PhD (Prin)  
J.J. Weinkam BS (Xavier), MS (Chic), DSc (Wash)

## Professors

M.S. Atkins BSc (Nott), MPhil (Warw), PhD (Br Col)  
B.K. Bhattacharya MSc (Calc), MSc, PhD (McG)  
F.W. Burton BSc, MA (Colorado), PhD (E Anglia)  
R.D. Cameron BASc, PhD (Br Col)  
V. Dahl MSc (Buenos Aires), PhD (Aix-Marseilles I), Dipl d'Et App (Aix-Marseilles II)  
J.P. Delgrande BSc, MSc, PhD (Tor)  
M.S. Drew BASc, MSc (Tor), PhD (Br Col)  
M. Ester MSc (Dortmund), PhD (Swiss Inst Tech)  
B.V. Funt BSc, MSc, PhD (Br Col)  
Q. Gu BS (Shandong), MS (Ibaraki), PhD (Tohoku)  
A. Gupta BSc (McM), MSc, PhD (Tor)  
R.F. Hadley BA (Virginia), MSc (S Fraser), PhD (Br Col)  
P. Hell BSc (Prague), MSc (McM), PhD (Montr)  
R. Krishnamurti BTech, MTech (IIT Madras), PhD (Penn)  
Z.N. Li BSc (China UST), MSc, PhD (Wis)  
A.L. Liestman BGS (Kansas), MS, PhD (Ill)  
W.S. Luk BA (Lond), MSc (Wat), PhD (Alta)  
J.G. Peters BMath (Wat), MSc, PhD (Tor)  
F. Popowich BSc (Alta), MSc (S Fraser), PhD (Edin)  
S.C. Sahinalp BSc (Bilkent), PhD (Maryland), Canada Research Chair  
T.C. Shermer BES (Johns H), PhD (McG)  
G. Tardos Diploma, PhD (Eötvös Loránd, Budapest), Canada Research Chair  
K. Wang BSc (Chongqing), MSc, PhD (Georgia IT)

## Associate Professors

P. Berenbrink MSc, PhD (Paderborn)  
A. Bulatov MSc (Ural State), PhD (Russian Academy of Science)  
A.F. Ergun BSc (Bilkent), PhD (Cornell)  
U. Glässer BSc, MSc, PhD, Habilitation (Paderborn)  
L.J. Hafer BSEE, MS, PhD (Carnegie-Mellon)  
A. Kirkpatrick BS (Penn State), MS (Maharishi Intl), PhD (Ore)  
D. Mitchell BSc (Tor), MSc (S Fraser), PhD (Tor)  
T. Möller BS (Humboldt), MS, PhD (Ohio State)  
J. Pei BE, ME (Jiao Tong), PhD (S Fraser)  
O. Schulte BSc (Tor), MSc, PhD (Carnegie Mellon)  
E. Ternovska BSc (Moscow State), MSc (Russian Academy of Science), PhD (Tor)  
K. Wiese BMath, BSc, MSc (Saarlandes), PhD (Regina)

## Assistant Professors

D. Beyer DrRerNat, DiptInf, PhD (Brandenburg)  
A. Fedorova MS, PhD (Harvard)  
G. Hamameh BSc (Jordan), MSc, PhD (Chalmers)  
M. Hafeeda BSc, MSc (Mansoura), PhD (Purdue)  
V. Kabanets BSc (Kiev), MSc (S Fraser), PhD (Tor)  
J.C. Liu BSc (Tsinghua), PhD (HKUST)  
G. Mori BSc (Tor), PhD (Calif)  
A. Sarkar, BSc (Poona), PhD (Penn)  
T. Smyth BMus (McG), MMus (NY), DPhil (Stan)  
R.T. Vaughan BA (Sus), PhD (Oxf)  
H. Zhang BSc, MSc (Wat), PhD (Tor)

## Adjunct Professors

I. Birol BSc, MSc, PhD (Bogazici)  
A. Cherkasov Dipl (Kazan State), PhD, DSc (SciCoun Russian AcaSci)  
F. Chudak Licentate Math (Buenos Aires), MA (S Carolina), PhD (Cornell)  
A. Condon BSc (UnivColl Cork), PhD (Wash)

J.C. Dill BASc (Br Col), MS (N Carolina), PhD (Cal Tech), PEng  
G.D. Finlayson BSc (Strath), MSc, PhD (S Fraser)  
F.D. Fracchia BSc (Regina), MS (Wat), PhD (Regina)  
T. Lee BSc, MSc (Br Col), PhD (S Fraser)  
T. Schaub BSc, MSc, PhD (Darmstadt)  
H. Wehn MSc, PhD (McG)

## Senior Lecturers

G. Baker BSc (Qu), MSc (S Fraser)  
B. Bart BSc, BMath (Wat), BEd (WOnt), MSc (S Fraser)  
A.H. Dixon BSc, MSc, PhD (Br Col)  
M.D. Evans BSc, MA (Dal), MSc (Dund), MSc (Birm)

## Lecturers

D. Cukierman BSc (Republica, Uruguay), MSc, PhD (S Fraser)  
T. Donaldson, BSc (S Fraser), MMath, PhD (Wat)  
J. Edgar BSc (Univ Coll, London), MSc (S Fraser)  
H.S. Khangura BSc (Tor), MSc (Br Col)  
A. Lavergne BSc (S Fraser), MSc (Br Col)  
S. Pearce BSc, MSc (Br Col), PhD (Ariz)  
J. Regan BSc (Vic, BC), MS, PhD (Cal Tech)

## Associate Members

P. Borwein, Department of Mathematics  
P. Brantingham, School of Criminology  
C. Chauve, Department of Mathematics  
M.B. Monagan, Department of Mathematics  
F.J. Pelletier, Department of Linguistics, Department of Philosophy  
R.D. Russell, Department of Mathematics  
L. Stacho, Department of Mathematics  
M. Taboada, Department of Linguistics  
L. Trajkovic, School of Engineering Science  
M.R. Trummer, Department of Mathematics

## Advisors

For general advice, see [www.cs.sfu.ca/undergrad/Advising/](http://www.cs.sfu.ca/undergrad/Advising/), 778.782.3796 Tel, [csadvise@cs.sfu.ca](mailto:csadvise@cs.sfu.ca)

For Simon Fraser University Surrey program advice, see [www.cs.sfu.ca/undergrad/Advising/](http://www.cs.sfu.ca/undergrad/Advising/), 778.782.7552 Tel, [csadvise@sfu.ca](mailto:csadvise@sfu.ca),

To book your own advising appointment, see [www.cs.sfu.ca/CC/adbooking/calendar.cgi](http://www.cs.sfu.ca/CC/adbooking/calendar.cgi)

For co-operative education advice, see [www.sfu.ca/cscoop/](http://www.sfu.ca/cscoop/)

Ms. H. Chicoine, Co-operative Education Co-ordinator, 9832 Applied Science Building, 778.782.3917 Tel, [chicoine@sfu.ca](mailto:chicoine@sfu.ca)

## Programs Offered

Computing Science Major: this program leads to a BSc or BA degree with a major or honors in computing science; students may complete specialist programs and concentrations  
Software Systems Major  
Joint Programs  
Post Baccalaureate Diploma in Computing Science  
Second Degree Program  
Simon Fraser University – Zhejiang University Dual Degree Program

The school offers a general program leading to a BSc or BA degree with major or honors in computing science, and specialist programs leading to a BSc degree with a computing science major. It also offers many joint major programs, and also participates in the cognitive science program (see "Cognitive Science Program" on page 98) and the Management and Systems Science Program see "Management and Systems Science Program" on page 195). The school also offers a minor program.

## Transfer Credit and Residency Requirements

Transfer students are advised that residency requirements apply to all programs offered or jointly offered by the School of Computing Science. See "Residency Requirements" on page 76.

## Prerequisite Grade Requirement

Computing science course entry requires a C- or better in each prerequisite course. A minimum 2.40 cumulative grade point average is required for upper division computing courses.

## Admission Requirements

Entry into computing science programs is possible via

- direct admission from high school
- direct transfer from a recognized post-secondary institution, or combined transfer units from more than one post-secondary institution
- internal transfer from within Simon Fraser University

Admission is competitive. A separate admission average for each entry route is established each term, depending on spaces available and subject to the approval of the Dean of Applied Sciences. Admission averages are calculated over a set of courses satisfying particular breadth constraints.

See "Admission and Readmission" on page 17 for provisions governing high school direct entry or direct transfer from another post-secondary institution.

Please contact an advisor at [www.cs.sfu.ca/undergrad/Advising/](http://www.cs.sfu.ca/undergrad/Advising/)

## Guaranteed Placement Program

This admission entry program has been created for high school students who are not eligible for our direct admission program (based on their high school grade average), but still have a good grade average.

This program assures students of timely access to the courses needed to enter the computing science major or honors programs under the internal transfer model.

Students may continue in the program for up to two years with a 2.40 or better CGPA.

Students who are considering this program are strongly recommended to meet with a school academic advisor within the first two terms of study. See [www.cs.sfu.ca/undergrad/Advising/](http://www.cs.sfu.ca/undergrad/Advising/)

## Internal Transfer

Simon Fraser University students applying for School of Computing Science admission are selected on the basis of an admission Computing Related Grade Point Average. The CRGPA is calculated over the best three courses chosen as follows.

- one mathematics course chosen from: MACM 101, 201, MATH 150 (or 151), 152 and 240 (or 232)
- one computing course chosen from: CMPT 125 (or 126 or 128), 150, (or ENSC 150), 225, 250 and 275
- one additional mathematics or computing science course chosen from the above lists

No course may be included in the average if it is a duplicate of any previous course completed at Simon Fraser University or elsewhere. All three courses must be completed prior to application. See [www.cs.sfu.ca/undergrad/Advising/](http://www.cs.sfu.ca/undergrad/Advising/) for information.

## Continuation Requirements

Students who do not maintain at least a 2.40 CGPA, will be placed on the school's probation. Courses available to probationary students may be limited. Each term, these students must consult an advisor prior to enrolment and must achieve either a term 2.40 term GPA or an improved CGPA. Reinstatement

from probationary standing occurs when the CGPA improves to 2.40 or better and is maintained.

Students must obtain permission from the department if they wish to complete, for further credit, any course that is a prerequisite for a course the student has already completed with a grade of C- or higher.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information or visit [www.cs.sfu.ca/undergrad/Advising/](http://www.cs.sfu.ca/undergrad/Advising/).

For students entering from Simon Fraser University, Chinese language and culture courses completed at Zhejiang University may fulfil up to two Breadth-Social Sciences (B-Soc) and two Breadth-Humanities (B-Hum) requirement.

For students entering from Zhejiang University, selected cultural, social science and humanities courses completed at Zhejiang University may fulfil up to two Breadth-Social Sciences (B-Soc) and two Breadth-Humanities (B-Hum) requirement.

## Second Degree Program

This is a direct admission program and holders of a recognized bachelor's degree in another discipline may follow this program to earn a second degree.

Applicants should indicate their program interest by selecting the computing science, Faculty of Applied Sciences BSc major as their first choice. Applicants are selected primarily on upper division (third and fourth year) performance in the prior bachelor's degree and subsequent professional experience.

Well-prepared students can complete the program in one year (three terms) of full-time study. The ideal preparation is a mathematics background with programming experience comparable to the first two years of the computing science major program and a prior degree in which English was the language of instruction. Students without this may need additional time to complete lower division prerequisites prior to starting upper division courses.

In accord with University regulations, the second degree program consists of the upper division requirements of the full computing science degree, including WQB requirements as assessed by the school. For a general BSc degree majoring in computing science, 45 upper division units must be completed including the 39 upper division units as specified for the major. For more information visit [www.cs.sfu.ca/undergrad/Advising/](http://www.cs.sfu.ca/undergrad/Advising/)

## Major and Honors Programs

These programs are organized to take advantage of many options. Some prepare for employment in computer-related positions in government, business, or industry, and for computing science graduate studies or a related area. This undergraduate degree is appropriate for many interdisciplinary areas.

## Lower Division Requirements

Students who plan a major or honors in computing science must complete the courses listed below. It is suggested that students complete a recommended schedule of courses within the first two years.\*

### Courses

Students complete one of\*\*

- CMPT 125-3 Introduction to Computing Science and Programming II
- CMPT 126-3 Introduction to Computing Science and Programming

and all of

- CMPT 150-3 Introduction to Computer Design
- CMPT 225-3 Data Structures and Programming
- CMPT 250-3 Introduction to Computer Architecture
- CMPT 275-4 Software Engineering I
- MACM 101-3 Discrete Mathematics I
- MACM 201-3 Discrete Mathematics II
- MATH 151-3 Calculus I\*\*\*
- MATH 152-3 Calculus II\*\*\*
- MATH 240-3 Algebra I: Linear Algebra\*\*\*

and one of

- STAT 270-3 Introduction to Probability and Statistics I
- BUEC 232-4 Data and Decisions I (with permission of an advisor) 37-38 units

\*see [www.cs.sfu.ca/undergrad/Advising/programs\\_majors.html](http://www.cs.sfu.ca/undergrad/Advising/programs_majors.html) for recommended schedule

\*\*to aid your choice, prior to enrolment, complete the self-evaluation test at [www.cs.sfu.ca/undergrad/Advising/120-126/](http://www.cs.sfu.ca/undergrad/Advising/120-126/)

\*\*\*MATH 150 may be substituted for MATH 151. MATH 154/155 or MATH 157/158 with a grade of at least B+ may be substituted with school permission. MATH 232 may be substituted for MATH 240.

Students are encouraged to meet the Simon Fraser University undergraduate degree requirements for writing, quantitative, and breadth courses as early as possible in their degree (see "Writing, Quantitative, and Breadth Requirements" on page 7).

## Upper Division Requirements

Major and honors students must consult an advisor before commencing upper division requirements. For information, see [www.cs.sfu.ca/undergrad/Advising/](http://www.cs.sfu.ca/undergrad/Advising/)

The primary upper division requirements for a major or honors are structured according to breadth, depth and credential requirements listed below.

### Table I – Computing Science Concentrations

<i>Artificial Intelligence</i>
CMPT 310-3 Artificial Intelligence Survey
CMPT 340-3 Biomedical Computing
CMPT 411-3 Knowledge Representation
CMPT 412-3 Computational Vision
CMPT 413-3 Computational Linguistics
CMPT 414-3 Model-Based Computer Vision
CMPT 417-3 Intelligent Systems
CMPT 418-3 Computational Cognitive Architecture
CMPT 419-3 Special Topics in Artificial Intelligence
<i>Computer Graphics and Multimedia</i>
CMPT 361-3 Introduction to Computer Graphics
CMPT 363-3 User Interface Design
CMPT 365-3 Multimedia Systems
CMPT 368-3 Introduction to Computer Music Theory and Sound Synthesis
CMPT 461-3 Image Synthesis
CMPT 464-3 Geometric Modeling in Computer Graphics
CMPT 466-3 Animation
CMPT 467-3 Visualization
CMPT 469-3 Special Topics in Computer Graphics
<i>Computing Systems</i>
CMPT 300-3 Operating Systems I
CMPT 305-3 Computer Simulation and Modeling
CMPT 371-3 Data Communications and Networking
CMPT 379-3 Principles of Compiler Design
CMPT 401-3 Operating Systems II
CMPT 431-3 Distributed Systems
CMPT 432-3 Real-time Systems
CMPT 433-3 Embedded Systems
CMPT 471-3 Networking II
CMPT 479-3 Special Topics in Computing Systems
CMPT 499-3 Special Topics in Computer Hardware
<i>Information Systems</i>
CMPT 301-3 Information Systems Management
CMPT 354-3 Database Systems I
CMPT 370-3 Information System Design

CMPT 441-3 Introduction to Computational Biology  
 CMPT 454-3 Database Systems II  
 CMPT 456-3 Information Retrieval and Web Search  
 CMPT 459-3 Special Topics in Database Systems  
 CMPT 470-3 Web-based Information Systems  
 CMPT 474-3 Web Systems Architecture

#### *Programming Languages and Software*

CMPT 373-3 Software Development Methods  
 CMPT 383-3 Comparative Programming Languages  
 CMPT 384-3 Symbolic Computing  
 CMPT 473-3 Software Quality Assurance  
 CMPT 475-3 Software Engineering II  
 CMPT 477-3 Introduction to Formal Verification  
 CMPT 480-3 Foundations of Programming Languages  
 CMPT 481-3 Functional Programming  
 CMPT 489-3 Special Topics in Programming Languages

#### *Theoretical Computing Science*

CMPT 307-3 Data Structures and Algorithms  
 CMPT 308-3 Computability and Complexity  
 CMPT 404-3 Cryptography and Cryptographic Protocols  
 CMPT 405-3 Design and Analysis of Computing Algorithms  
 CMPT 406-3 Computational Geometry  
 CMPT 407-3 Computational Complexity  
 CMPT 408-3 Theory of Computer Networks/Communications  
 CMPT 409-3 Special Topics in Theoretical Computing Science  
 MACM 300-3 Introduction to Formal Languages and Automata with Applications

#### **Table II – Application Courses**

CMPT 340-3 Computers in Biomedicine  
 CMPT 441-3 Introduction to Computational Biology

#### **Table III – Computing Mathematics Courses**

MACM 316-3 Numerical Analysis I  
 MACM 401-3 Symbolic Computation  
 MATH 308-3 Linear Programming  
 MATH 343-3 Combinatorial Aspects of Computing  
 MACM 416-3 Numerical Analysis II

The following courses may be counted in one of the above tables with permission of the school.

CMPT 318-3 Special Topics in Computing Science  
 CMPT 415-3 Special Research Projects  
 CMPT 416-3 Special Research Projects  
 CMPT 496-3 Directed Studies  
 CMPT 497-6 Dual Degree Program Capstone Project  
 CMPT 498-6 Honors Research Project

#### **Upper Division Requirements for a Major Breadth Requirement**

Five courses from five of the six table 1 areas of concentration must be completed including both of CMPT 300-3 Operating Systems I  
 CMPT 307-3 Data Structures and Algorithms 15 units  
 CMPT 354 is also recommended.

#### **Depth Requirement**

Twelve units of additional CMPT courses numbered CMPT 400 or above must be completed (excluding CMPT 415, 416 and 498, which may be included by special permission). 12 units

#### **BSc Credential**

For a BSc degree with a major in computing science, the following additional requirements must be met.

- two additional courses chosen from tables I, II or III
- MACM 316 and
- CMPT 320 or CMNS 353

Other courses may be approved on submission of a detailed course outline to the school. 12 units

#### **BEd Credential**

For a major in computing science in conjunction with a BEd program as offered by the Faculty of

Education, one additional CMPT course chosen from table I or table II must be completed, to total at least 30 upper division units in CMPT courses. 3 units

#### **BA Credential**

For a BA degree with a major in computing science within the Faculty of Applied Sciences, the following additional requirements must be met.

- one additional CMPT upper division course chosen from table I or table II must be completed bringing the total upper division units in CMPT courses to a minimum of 30 units.
- a concentration of 15 units in a Faculty of Arts and Social Sciences discipline (department) including at least six units of upper division credit. 18 units

#### **Graduation Requirements**

For all computing science major programs, the upper division CMPT GPA of 2.00 must be maintained.

For a computing science major, students complete

- 120 units including an overall minimum of 45 upper division units
- a minimum of at least 30 upper division CMPT units must be counted towards the major and cannot at the same time be counted towards the unit requirements of any other program.

See “Major – Minor Program” on page 6 for regulations governing university graduation requirements, or see [www.students.sfu.ca/calendar](http://www.students.sfu.ca/calendar) to find “General Information” from the Table of Contents.

#### **Upper Division Requirements for Honors**

For a BA or BSc degree with honors in computing science, students fulfil the following requirements for a BA or BSc major in computing science, with the following modifications and additions.

#### **Unit Requirement**

Additional computing science courses must be completed to bring the total upper division units in CMPT/MACM to at least 50 within the minimum of 60 upper division units and an overall total of 132 units are required for the degree, together with a graduation grade point average of at least 3.00.

#### **Breadth Requirement**

One course each in the six areas of table I is required. These courses must include CMPT 300, 307 and 354. 18 units

#### **Depth Requirement**

Six additional courses from table I are required. These courses must include CMPT 405 and at least one other course in the theoretical computing science concentration. At least four of the courses must be numbered 400 or above.

In addition, six units of research courses are required including both of

CMPT 415-3 Special Research Projects  
 CMPT 416-3 Special Research Projects

or

CMPT 498-6 Honors Research Project 24 units

#### **Concentrations**

As part of a major or honors program, students may complete one or more concentrations from these six areas: artificial intelligence, computer graphics and multimedia, computing systems, information systems, programming languages and software engineering, and theoretical computing science.

To complete a concentration, students complete the major or honors requirements, including four courses in the corresponding section of table 1, at least two of which must be at the 400 division. Courses used to meet the requirements of a concentration may also be used to meet other program requirements.

## **Specialist Programs**

Students must consult an advisor before commencing a specialist program, preferably early in their second year. See [www.cs.sfu.ca/undergrad/Advising/](http://www.cs.sfu.ca/undergrad/Advising/)

### **Specialist Program in Multimedia Computing**

#### **Lower Division Requirements**

Students complete all lower division requirements for the computing science major program plus

FPA 111-3 Issues in the Fine and Performing Arts

plus at least two of

CMNS 259-3 Acoustic Dimensions of Communication I

FPA 147-3 Introduction to Electroacoustic Music

FPA 247-3 Electroacoustic Music I

FPA 289-3 Special Topics in the Fine and Performing Arts I

FPA 290-3 Video Production I 58-61 units

#### **Upper Division Requirements**

Students complete at least 39 units of computing science upper division courses, which should include CMPT courses in the following required and elective courses.

Students complete all of

CMPT 300-3 Operating Systems I

CMPT 307-3 Data Structures and Algorithms

CMPT 320-3 Social Implications of a Computerized Society

CMPT 361-3 Introduction to Computer Graphics

CMPT 363-3 User Interface Design

CMPT 365-3 Multimedia Systems

MACM 316-3 Numerical Analysis I 21 units

At least six of the following are required, three of which must be 400 division, three must be designated CMPT and two must be non-CMPT courses.

CMNS 358-4 Sound Tape Recording: Theory and Uses

CMNS 359-4 Acoustic Dimensions of Communication II

CMPT 310-3 Artificial Intelligence Survey

CMPT 354-3 Database Systems and Structures

CMPT 371-3 Data Communications and Networking

CMPT 412-3 Computational Vision

CMPT 414-3 Model-Based Computer Vision

CMPT 461-3 Advanced Computer Graphics

CMPT 466-3 Animation

CMPT 468-3 Introduction to Computer Music and Sound Synthesis

CMPT 469-3 Special Topics in Computer Graphics

FPA 311-5 The Arts in Context: Selected Topics

FPA 353-3 Playmaking IV

FPA 390-3 Video Production II 18 units

Relevant FPA and CMNS lower and upper division special topics courses may be applied to the above requirement with the approval of the director of undergraduate studies in the School of Computing Science. Some FPA courses listed above require prerequisites that are not included here.

### **Specialist Program in Software Engineering**

The completion of a bachelor of science degree in computing science with the completion of a specialist program in software engineering is not a professional engineering degree as it is not certified by professional engineering societies. It is instead an area of study recognized by computing science.

#### **Lower Division Requirements**

These requirements are identical to those of the major and honors program listed above.

## Upper Division Requirements

### Required Courses

Students complete all eight of  
 CMPT 300-3 Operating Systems I  
 CMPT 307-3 Data Structures and Algorithms  
 CMPT 320-3 Social Implications of a Computerized Society  
 CMPT 354-3 Database Systems I  
 CMPT 363-3 User Interface Design  
 CMPT 371-3 Data Communications and Networking  
 CMPT 475-3 Software Engineering II  
 MACM 316-3 Numerical Analysis I 24 units

### Elective Courses

Students complete five or more courses chosen from the following list, at least three of which must be at the 400 division.

CMPT 301-3 Information Systems Management  
 CMPT 370-3 Information System Design  
 CMPT 379-3 Principles of Compiler Design  
 CMPT 383-3 Comparative Programming Languages  
 CMPT 401-3 Operating Systems II  
 CMPT 454-3 Database Systems II  
 CMPT 459-3 Special Topics In Database Systems  
 CMPT 470-3 Web-based Information Systems  
 CMPT 471-3 Networking II  
 CMPT 477-3 Introduction to Formal Verification  
 CMPT 487-3 Software Engineering Tools and Environments  
 CMPT 489-3 Special Topics in Programming Languages  
 ENSC 351-4 Real Time and Embedded Systems 15 units

Additional upper CMPT courses are required to bring the total CMPT units to 45 or more (ENSC 351 is treated as CMPT credit for this purpose). 6 units

## Software Systems Major Program

This program provides skills, knowledge and thought processes necessary for professional software production, while also providing a broad background various computing systems that graduates encounter in their careers. For course planning information, visit <http://www.cs.sfu.ca/undergrad/Advising>

### Systems Requirements

Students complete all of  
 CMPT 150-3 Introduction to Computer Design  
 CMPT 250-3 Introduction to Computer Architecture  
 CMPT 300-3 Operating Systems I  
 and two of  
 CMPT 170-3 Introduction to Web Application Development  
 CMPT 371-3 Data Communications and Networking  
 CMPT 471-3 Networking II  
 CMPT 354-3 Database Systems I  
 CMPT 454-3 Database Systems II  
 CMPT 401-3 Operating Systems II  
 CMPT 432-3 Real-time Systems  
 CMPT 433-3 Embedded Systems  
 CMPT 470-3 Web-based Information Systems 15 units

### Fundamentals Requirements

Students complete all of  
 CMPT 307-3 Data Structures and Algorithms  
 MACM 101-3 Discrete Mathematics I  
 MATH 151-3 Calculus I  
 MATH 232-3 Elementary Linear Algebra  
 and one of  
 CMPT 322-3 Professional Responsibility and Ethics  
 CMPT 322W-3 Professional Responsibility and Ethics  
 and one of  
 STAT 101-3 Introduction to Statistics  
 STAT 270-3 Introduction to Probability and Statistics 18 units

## Software Engineering Requirements

Students complete all of  
 CMPT 212-3 Object-Oriented Applications Design in C++  
 CMPT 225-3 Data Structures and Programming  
 CMPT 276-3 Introduction to Software Engineering  
 CMPT 373-3 Software Development Methods  
 CMPT 379-3 Principles of Compiler Design  
 CMPT 473-3 Software Quality Assurance  
 and either  
 CMPT 125-3 Introduction to Computing Science and Programming  
 or  
 CMPT 128-3 Introduction to Computing Science and Programming for Engineers  
 or both of  
 CMPT 120-3 Introduction to Computing Science and Programming I  
 CMPT 125-3 Introduction to Computing Science and Programming II  
 and one of  
 CMPT 383-3 Comparative Programming Languages  
 CMPT 384-3 Symbolic Computing  
 CMPT 477-3 Formal Verification  
 CMPT 474-3 Web Systems Architecture 24-27 units

### Specialization Requirements

Students are required to complete a specialization consisting of nine additional CMPT or MACM units at the 300 or 400 division. This specialization must be approved by the School of Computing Science. Preapproved sets of courses can be found at [www.cs.sfu.ca/undergrad/Advising](http://www.cs.sfu.ca/undergrad/Advising). 9 units

### Depth Requirement

Students must complete at least nine CMPT or MACM units at the 400 division.

## Simon Fraser University – Zhejiang University Dual Degree Program

This unique program developed by Simon Fraser University and Zhejiang University (China) offers a dual degree, with a major in computing science from both institutions. Program admission inquiries may be sent to [cschina@sfu.ca](mailto:cschina@sfu.ca).

### Admission Requirements

This is a direct admission program. Simon Fraser University applicants indicate their interest on the *Application for Undergraduate Admission to Simon Fraser University* by selecting the 'China Dual Degree Zhejiang University' under Program/Plan in Computing Science, Faculty of Applied Sciences.

Admission is competitive and enrolment is limited.

The program begins each fall term. Applicants must meet the standard requirements for admission to Simon Fraser University and the School of Computing Science. Concurrent to the Simon Fraser University admission application, students must also submit a 'Statement of Interest' to the SFU-ZU admissions committee, School of Computing Science. Applicants will be selected based on their *Statement of Interest* and their academic standing. Program admission inquiries may be sent to [cschina@sfu.ca](mailto:cschina@sfu.ca).

### Program Structure

#### Simon Fraser University Students

Students with no previous knowledge of Chinese will complete a five year curriculum with customized intensive Chinese language courses at Simon Fraser University in addition to some foundational courses in the Prep/0th year, plus Chinese immersion in the summer.

#### First and Second Year

Simon Fraser University students study at Zhejiang University, completing 80 lower division units (including 20 for Chinese language and culture.)

#### Third and Fourth Year

Students complete 60 units at Simon Fraser University (including a minimum of 45 upper division units).

### Zhejiang University Students

#### First and Second Year

Zhejiang University students study at Zhejiang University, completing 80 lower division units plus 18 units (Chinese moral education, etc.).

#### Third and Fourth Year

Students complete 60 units at Simon Fraser University (including a minimum of 45 upper division units).

All core courses are scheduled according to the articulation documents shown on the website [www.cs.sfu.ca/SFU-ZU](http://www.cs.sfu.ca/SFU-ZU). All students in the dual degree program are expected to fulfil the WQB requirements (see "Writing, Quantitative, and Breadth Requirements" on page 7) for their Simon Fraser University degree.

The option for work experience is available to students after the fourth term at Zhejiang University.

Upon completion, students receive dual degrees from Simon Fraser University and Zhejiang University.

### Tuition and Program Fee

All students pay undergraduate fees (including tuition and other fees) to Simon Fraser University. All students must pay a \$700 program fee each year in addition to the other tuition fees. Students are also responsible for travel, accommodation, insurance, textbooks and general living expenses (noting that in China, books, housing meals, transportation and living expenses will be lower than in Canada). Domestic students pay the basic Simon Fraser University tuition. International students attending the SFU-ZU dual degree program pay the basic Simon Fraser University tuition in years one and two when studying at Zhejiang University. In years zero, three and four, when studying at Simon Fraser University, international students will pay differential tuition fees.

### Dual Degree Credential

Students will receive two degrees after completing lower division courses at Zhejiang University, and upper division courses at Simon Fraser University, as specified in the articulation documents at [www.cs.sfu.ca/SFU-ZU](http://www.cs.sfu.ca/SFU-ZU).

All students must complete the following Simon Fraser University upper division courses.

CMPT 300-3 Operating Systems I  
 CMPT 307-3 Data Structures and Algorithms  
 CMPT 320-3 Social Implications of a Computerized Society  
 CMPT 354-3 Database Systems I  
 CMPT 371-3 Data Communications and Networking  
 CMPT 376-3 Technical Writing and Group Dynamics  
 MACM 316-3 Numerical Analysis I

two CMPT courses from two different concentrations selected from: artificial intelligence, computer graphics and multimedia, or programming languages and software (see Table I Computing Science Concentration) at the 300 division

four CMPT courses numbered 400 or higher from Table I (see "Table I – Computing Science Concentrations" on page 77)

CMPT 497 capstone projects (or six units of approved upper division CMPT courses)

## Minimum Credit and Residency Requirement

Students must complete at least 54 units at Zhejiang University (ZU) including at least 34 computing science core course units. Students must also complete at least 54 units at Simon Fraser University. Students admitted from Zhejiang University must complete at least 39 upper division units of these minimum 54 units at Simon Fraser University. Courses completed at ZU are not transfer credits. They are marked as DDP credits in the *other credits* section of the Simon Fraser University transcript.

## Co-operative Education and Work Experience

All students may choose to participate in co-operative education or work placements.

## Minor Program

### Admission Requirements

Admission to a computing science minor is open to all Simon Fraser University students with a major in a discipline other than computing science. Admission is competitive and requires the lower division courses listed below. The admission GPA is established each term, and will never be less than 2.40.

### Lower Division Requirements

Students who plan to undertake a minor in computing science should normally obtain credit for the following lower division courses.

one of\*

CMPT 125-3 Introduction to Computing Science and Programming I

CMPT 126-3 Introduction to Computing Science and Programming

and all of

CMPT 150-3 Introduction to Computer Design  
CMPT 225-3 Data Structures and Programming  
MACM 101-3 Discrete Mathematics I  
MATH 151-3 Calculus I\*\*

and one of

CMPT 250-3 Introduction to Computer Architecture  
CMPT 275-4 Software Engineering I

and one of

PHIL 100-3 Knowledge and Reality  
PHIL 120-3 Introduction to Moral Philosophy  
TECH 101-3 Fundamentals of Teamwork and Communication II

or any 100 division ENGL course 18-22 units

\*to aid your choice, prior to enrolment, complete the self-evaluation test at [www.cs.sfu.ca/undergrad/Advising/120-126/](http://www.cs.sfu.ca/undergrad/Advising/120-126/)

\*\*MATH 150 may be substituted for MATH 151. MATH 154 or 157 with a grade of at least B+ may be substituted with permission of the school

### Upper Division Requirements

For a minor, 15 units of upper division CMPT or MACM courses is required, including at least nine CMPT units chosen from Table I – Computing Science Concentrations (see page 77). 15 units

### Graduation Requirements

A grade point average of 2.00 must be obtained for upper division courses used to fulfil the above requirements. See [www.students.sfu.ca/calendar](http://www.students.sfu.ca/calendar).

## Computing Science and Linguistics Joint Major Program

The School of Computing Science and the Department of Linguistics offer this joint major in the

area of computational linguistics. Contact advisors in both departments for permission to enrol. Student enrolment, appeals and graduation processing are handled by the school.

### Lower Division Requirements

Students complete all of  
MATH 151-3 Calculus I\*  
MATH 152-3 Calculus II\*  
MATH 240-3 Algebra I: Linear Algebra\*  
and one of  
BUEC 232-4 Data and Decisions I  
STAT 270-3 Introduction to Probability and Statistics  
and one of  
COGS 100-3 Introduction to Cognitive Science  
or one course chosen from the social sciences electives list in the computing science major program's lower division requirements 46-51 units

\*MATH 150 may be substituted for MATH 151. MATH 154/155 or 157/158 with a grade of at least B+ may be substituted with permission of the school. MATH 232 may be substituted for MATH 240.

### Computing Science Requirements

Students complete either  
CMPT 126-3 Introduction to Computing Science and Programming\*

or both of

CMPT 120-3 Introduction to Computing Science and Programming I\*

CMPT 125-3 Introduction to Computing Science and Programming II\*

and all of

CMPT 150-3 Introduction to Computer Design  
CMPT 225-3 Data Structures  
CMPT 275-4 Software Engineering  
MACM 101-3 Discrete Mathematics I  
MACM 201-3 Discrete Mathematics II

\*to aid in your choice, prior to enrolment, complete the self-evaluation test at [www.cs.sfu.ca/undergrad/Advising/120-126](http://www.cs.sfu.ca/undergrad/Advising/120-126)

### Linguistics Requirements

Students complete all of  
LING 220-3 Introduction to Linguistics  
LING 221-3 Introduction to Phonetics and Phonology  
LING 222-3 Introduction to Syntax

### Upper Division Requirements

#### Computing Science Requirements (24 units)

Students complete all of  
CMPT 300-3 Operating Systems  
CMPT 307-3 Data Structures and Algorithms  
CMPT 320-3 Social Implications of a Computerized Society  
CMPT 413-3 Computational Linguistics

In addition, students choose four courses from the following distinct concentration areas: computer graphics and multimedia; information systems; programming languages and software; computing systems (CMPT 379 is recommended); theoretical computer science (CMPT 308 is recommended).

#### Linguistics Requirements (21 units)

Students complete both of  
LING 321-3 Phonology  
LING 322-3 Syntax  
and one of  
LING 400-3 Formal Linguistics  
MACM 300-3 Introduction to Formal Languages and Automata with Applications

and 12 units chosen from the following  
LING 323-3 Morphology  
LING 324-3 Semantics  
LING 330-3 Phonetics

LING 401-3 Topics in Phonetics  
LING 405-3 Topics in Syntax  
LING 406-3 Topics in Semantics  
LING 480-3 Topics in Linguistics I\*  
LING 481-3 Topics in Linguistics II\*

\*when offered with a suitable topic

### Other Requirements

Depending on the student's choice, either a bachelor of arts from the Faculty of Arts and Social Sciences (FASS), or a bachelor of science from the Faculty of Applied Sciences (FAS) will be awarded. Students must fulfil their chosen faculty's distinct requirements, such as FASS breadth requirements, or FAS residency requirements. For details about Faculty requirements, see "Bachelor of Arts Program" on page 88 in the Faculty of Arts and Social Science, and also see "Residency Requirements" on page 76 in the Faculty of Applied Sciences.

Students are encouraged to enrol in the Co-operative Education program.

## Computing Science and Molecular Biology and Biochemistry Joint Major Program

The School of Computing Science and the Department of Molecular Biology and Biochemistry offer this joint major program. See "Department of Molecular Biology and Biochemistry" on page 200 within the *Faculty of Science*. Student enrolment, appeals and graduation processing are handled by the School of Computing Science in the Faculty of Applied Sciences ([www.cs.sfu.ca](http://www.cs.sfu.ca)). Contact an advisor at [www.cs.sfu.ca/undergrad/Advising/](http://www.cs.sfu.ca/undergrad/Advising/)

## Computing Science and Philosophy Joint Major Program

The School of Computing Science and the Department of Philosophy co-operate in offering this joint major program. The administrative home is within the Faculty of Applied Sciences for purposes of student enrolment, appeals and graduation processing. Interested students should contact advisors in both departments.

### Lower Division Requirements

(50-55 units)

Students complete all of  
MATH 152-3 Calculus II  
MATH 232-3 Elementary Linear Algebra

and one of

MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I

and one of

BUEC 232-4 Data and Decisions I  
STAT 270-3 Introduction to Probability and Statistics

and one physical science course chosen from the physical sciences electives list for the computing science lower division requirements.

### Computing Science Requirements

Students complete all of  
CMPT 120-3 Introduction to Computing Science and Programming I\*  
CMPT 125-3 Introduction to Computing Science and Programming II\*  
CMPT 150-3 Introduction to Computer Design  
CMPT 225-3 Data structures  
CMPT 275-4 Software Engineering  
MACM 101-3 Discrete Mathematics I  
MACM 201-3 Discrete Mathematics II

\*\*CMPT 126 may be completed in lieu of CMPT 120 and 125



**Philosophy Requirements**

Students complete at least 16 units of lower division courses including one of

PHIL 100-3 Knowledge and Reality

PHIL 120-3 Introduction to Moral Philosophy

and one of

PHIL 150-3 History of Philosophy I

PHIL 151-3 History of Philosophy II

and all of

PHIL 201-3 Epistemology

PHIL 203-3 Metaphysics

PHIL 210-4 Deductive Logic

**Upper Division Requirements**

(44 units)

**Computing Science Requirements**

Students complete all of

CMPT 300-3 Operating Systems

CMPT 307-3 Data Structures and Algorithms

CMPT 310-3 Artificial Intelligence Survey

CMPT 354-3 Database Management Systems

and one of

CMPT 320-3 Implications of a Computerized Society

PHIL 320-3 Social and Political Philosophy

PHYS 321-3 Moral Issues and Theories

and one of

CMPT 383-3 Comparative Programming Languages

CMPT 384-3 Symbolic Computing

and one 400 division course from the Artificial

Intelligence concentration (see "Artificial Intelligence" on page 77)

and one 400 division courses from the theoretical

computing science concentration (see "Theoretical Computing Science" on page 78)

**Philosophy Requirements**

A total of 20 upper division philosophy units are required including

PHIL 341-3 Philosophy of Science

PHIL 343-3 Philosophy of Mind

PHIL 344-4 Philosophy of Language I

and at least one four-unit course at the 400 division.

**Other Requirements**

For a bachelor of arts degree from the Faculty of Arts and Social Sciences, students must fulfil the Faculty of Arts and Social Sciences requirements, such as the breadth requirements (see "Writing, Quantitative, and Breadth Requirements" on page 88).

For a bachelor of science degree from the Faculty of Applied Sciences, students must fulfil the Faculty of Applied Sciences requirements, such as the residency requirements (see "Residency Requirements" on page 76).

The University's writing, quantitative and breadth requirements must also be completed for either degree (see "Writing, Quantitative, and Breadth Requirements" on page 90).

**Co-operative Education**

Students are encouraged to enrol in this program.

**Information Systems in Business Administration and Computing Science Joint Major Program**

In co-operation with the Faculty of Business Administration, the School of Computing Science offers the Information Systems in Business Administration and Computing Science Joint Major Program. For course requirements see the Faculty of Business Administration's listing on page 148.

Upon completion, students may choose either a BBA (Faculty of Business Administration) or a BSc (Faculty of Applied Sciences) with the completion of MACM

316 and a course from tables I, II, or III (see "Upper Division Requirements" above), excluding CMPT 301, in addition to those listed in the Business Administration section for the joint major.

**Computing Science and Molecular Biology and Biochemistry Joint Honors Program**

See "Computing Science and Molecular Biology and Biochemistry Joint Honors Program" on page 202.

**Computing Science and Philosophy Joint Honors Program**

The School of Computing Science and the Department of Philosophy co-operate in offering this joint honors program. The administrative home is within the Faculty of Applied Sciences for purposes of student enrolment, appeals and graduation processing. Interested students should contact advisors in both departments.

At least 132 units is required for an honors degree.

**Lower Division Requirements**

(53-57 units)

In addition to completing the same lower division requirements as stipulated for the joint major in computing science and philosophy (see "Computing Science and Philosophy Joint Major Program" on page 80), students must also complete

CMPT 250-3 Introduction to Computer Architecture

**Upper Division Requirements**

(61 units)

**Computing Science Requirements**

In addition to completing the same lower division requirements as stipulated for the joint major in computing science and philosophy (see "Computing Science and Philosophy Joint Major Program" on page 80), students must also complete

CMPT 405-3 Design and Analysis of Computing Algorithms

Whereas the joint major stipulates that students must complete one 400 division course from the theoretical computing science concentration, joint honors students instead are required to complete any two additional 400 division CMPT course.

**Philosophy Requirements**

Students complete a total of 28 upper division

philosophy units including all of

PHIL 341-3 Philosophy of Science

PHIL 343-3 Philosophy of Mind

PHIL 344-3 Philosophy of Language I

PHIL 477-5 Honors Tutorial I

and one of

PHIL 322-3 History of Ethics

PHIL 331-3 Selected Topics

PHIL 332-3 Selected Topics

PHIL 333-3 Selected Topics

PHIL 350-3 Ancient Philosophy

PHIL 352-3 Seventeenth century Philosophy

PHIL 356-3 Century Philosophy

PHIL 357-3 Topics in the History of Philosophy

and one of

PHIL 444-4 Philosophy of Language II

PHIL 455-4 contemporary Issues in Epistemology and Metaphysics

and one four unit course at the 400 division.

**Other Requirements**

See "Other Requirements" on page 81 within the *Joint Major in Computing Science and Philosophy* for additional requirements.

**Mathematics and Computing Science Joint Honors Program**

With the Department of Mathematics, the School of Computing Science offers this joint honors program. For requirements see "Mathematics and Computing Science (MACM) Joint Major and Joint Honors Program" on page 199 in the Department of Mathematics section.

**Cognitive Science Program**

With the Departments of Linguistics, Philosophy and Psychology, the school contributes to the undergraduate program in cognitive science, leading to a BA. See "Cognitive Science Program" on page 98 for details.

**Management and Systems Science Program**

With the Department of Mathematics, the Department of Economics and the Faculty of Business Administration, the school contributes to the Management and Systems Science Program leading to a BSc. See "Management and Systems Science Program" on page 195 for requirements.

**Certificate in Computing Studies**

This program provides both part time and full time students with an opportunity to understand the fundamentals of computers and programming without necessarily specializing in computing science.

**Program Requirements**

(24-28 units)

A 2.00 grade point average is required on the CMPT courses that are used for graduation. Only courses completed at Simon Fraser University are used in this calculation.

**Required Courses**

Students complete one of\*

CMPT 125-3 Introduction to Computing Science and Programming II

CMPT 126-3 Introduction to Computing Science and Programming

and all of

CMPT 150-3 Introduction to Computer Design

CMPT 225-3 Data Structures and Programming

and one of

CMPT 275-4 Software Engineering I

CMPT 276-3 Introduction to Software Engineering

and one of

MACM 101-3 Discrete Mathematics I

MATH 240-3 Linear Algebra

STAT 270-3 Introduction to Probability and Statistics

\*to aid your choice, prior to enrolment, complete the self-evaluation test at [www.cs.sfu.ca/undergrad/Advising/120-126/](http://www.cs.sfu.ca/undergrad/Advising/120-126/)

**Elective Courses**

A total of nine elective units must be completed and must include two of the following lower division electives.

CMPT 110-3 Event-Driven Programming in Visual Basic

CMPT 165-3 Introduction to Multimedia and the Internet

CMPT 212-3 Object-Oriented Applications Design in C++

plus a three unit 300 or 400 division CMPT course.

## Post Baccalaureate Diploma in Computing Science

This program is for students who already possess a university degree. It includes studies in computing science at a more advanced level.

### Requirements

Students complete an approved program consisting of at least 30 units which include the following or equivalent.

CMPT 300-3 Operating Systems I

CMPT 307-3 Data Structures and Algorithms

CMPT 354-3 Database Systems and Structures

Students complete additional upper division courses to bring the total to at least 30 units. At least 24 units must be CMPT courses. Graduate courses may be included with permission of the school.

Courses must be selected in consultation with a program advisor to achieve a coherent program of study. The student is responsible for satisfying the prerequisites of program courses. This may entail completing more or all courses listed in the lower division requirements of the major in computing science (depending upon the student's prior transcript). Please contact an advisor at [www.cs.sfu.ca/undergrad/Advising/](http://www.cs.sfu.ca/undergrad/Advising/)

### Co-operative Education

Co-operative education is a system which combines work experience with academic studies. The student spends alternate terms on campus and in paid, study related jobs.

Arrangements for the work experiences are made through the school's co-op co-ordinators and the University's Co-operative Education. For further details, see "Co-operative Education" on page 212.

## School of Engineering Science

9801 Applied Science Building, 778.782.4371 Tel, 778.782.4951 Fax, [www.ensc.sfu.ca](http://www.ensc.sfu.ca)

### Director

M. Saif BSEE, MSEE, PhD (Cleveland), PEng

### Professors Emeriti

T.W. Calvert BSc(Eng) (Lond), MSEE (Wayne), PhD (Carnegie Tech), PEng

J.K. Cavers BAsC, PhD (Br Col), PEng

V. Cuperman MSc (TI Bucharest), SB, MS, PhD (Calif), PEng

J.C. Dill BAsC (Br Col), MS (N Carolina), PhD (Cal Tech), PEng

D.A. George BEng (McG), MS (Stan), ScD (MIT), PEng

W.A. Gruver BSEE, MSEE (Penn), DIC (Imperial Coll, London), PhD (Penn), PEng

### Professors

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R.H.S. Hardy BSc(Eng), PhD (Alta), PEng

P.K.M. Ho BSc, BE (Sask), PhD (Qu), PEng

R.F. Hobson BSc (Br Col), PhD (Wat)

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M. Syrzycki MSc, PhD (Warsaw)

L. Trajkovic DiplElecEng (Pristina), MS (Syr), PhD (Calif)

R.G. Vaughan BE, ME (Cant), PhD (Aalborg), Sierra

Wireless Professorship in Mobile Communication

### Associate Professors

J.D. Jones BSc (Sus), PhD (Reading), PEng

D.C. Lee BS, BCEE (Maryland), MSc, PhD (MIT)

M. Moallem BSc (Shiraz, Iran), MSc (Sharif, Iran), PhD (C'dia), PEng

E.J. Park BAsC (Br Col), MAsC, PhD (Tor)

G. Wang BSc, MSc (Huazhong), PhD (Vic, BC), PEng

### Assistant Professors

S. Arzanpour BSc (Tehran), MAsC (Tor), PhD (Wat)

M. Bahrami BSc (Sharif, Iran), MAsC (Amirkabir), PhD (Wat)

B. Bahreyni BSc (Sharif, Iran), MSc, PhD (Manit)

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### Adjunct Professors

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A. Hajshirmohammadi BSc, MSc (Isfahan), PhD (Wat)

K. Kohli BSc (PglMER), MSc (Mag), PhD (Punj, India)

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### Associate Members

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J.A. Hoffer, Kinesiology

M. Volker, University and Industry Liaison Office

J.M. Wakeling, Kinesiology

### Senior Lecturers

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L. One BSc (S Fraser)

S.A. Stevenson BA, MA (Br Col)

S. Whitmore BA (Nelson), MA (S Fraser)

### Lecturers

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\*joint appointment with biomedical physiology and kinesiology

### Programs Offered

#### Engineering Science Program

This program leads to a BAsC or BAsC (Honors) degree.

#### Mechatronics Systems Engineering Program

This program, located at Simon Fraser University Surrey, leads to a BAsC or BAsC (Honors) degree.

#### Computer and Electronics Design Minor

This program is available to all non-engineering science majors at Simon Fraser University who have high academic standing. This program does not lead to an accredited engineering degree.

### Admission Requirements

#### Minimum Admission Requirements

Students must be eligible for University admission and must submit an application as described in the "Admission and Readmission" on page 17 or at [www.students.sfu.ca/admission/](http://www.students.sfu.ca/admission/)

Courses required: physics 12, mathematics 12, chemistry 12, and English 12. See "Admission and Readmission" on page 17 for complete admission requirements.

The program begins each fall. However, admitted students may enter in the spring or summer term. Engineering science admission inquiries may be sent by email to [ensc-adm@sfu.ca](mailto:ensc-adm@sfu.ca). More detailed admission information is available at [www.ensc.sfu.ca](http://www.ensc.sfu.ca).

#### External Transfer from Another Post-Secondary Institution

Students transferring from other universities, regional colleges, or technical institutions may apply to begin study in any term and must have an admission average of 2.5.

#### Internal Transfer from Another Simon Fraser University Program

Simon Fraser University students who wish to transfer to engineering science require a 2.5 CGPA from the Faculty of Science, School of Computing Science, Science One, TechOne programs on a full course load (minimum 12 units). Students transferring from any other Simon Fraser University faculty, school, or program must have a CGPA of 2.7 on a full course load (minimum 12 units).

#### Transfer Credit and Residency Requirements

Transfer students are advised that residency requirements apply to all programs offered by the School of Engineering Science. See "Residency Requirements" on page 76.

#### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfill writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and

Breadth Requirements” on page 7 and the school’s website ([www.ensc.sfu.ca](http://www.ensc.sfu.ca)) for more information. For students in engineering science, these university requirements are modified as follows.

- for students in the computer engineering, electronics engineering, systems engineering, and engineering physics options, the total number of Breadth-Social Sciences (B-Soc) and Breadth-Humanities (B-Hum) courses is reduced to three courses, with at least one course in each category
- for students in the biomedical engineering option, one course in each of the Breadth-Social Sciences (B-Soc) and Breadth-Humanities (B-Hum) categories may be waived
- the B-Sci requirements are waived for engineering science students who complete PHYS 125 and 126 instead of PHYS 120 and 121

In addition, the Canadian Engineering Accreditation Board (CEAB) requires that one complementary studies elective in the ENSC curriculum must be in the *Central Issue, Methodology, and Thought Process* category.

### Minimum Grade Requirement

A C- grade or better in prerequisite courses is required to register in engineering science courses.

## Engineering Science Major Program

Engineering science students develop skills in systems design with a high level of scientific knowledge. This demanding program is aimed at the superior student. The program produces well educated, innovative engineer/scientists with entrepreneurial skills and attitudes who are oriented to new technologies. Program entry is competitive.

Students must achieve both a cumulative grade point average (CGPA) and an upper division grade point average (UDGPA) of at least 3.00 to graduate from the honors program. The honors program requires an undergraduate thesis.

The general degree program requires a CGPA and UDGPA each of at least 2.0 in accordance with University graduation requirements.

Students undertake a basic core of pure, applied and engineering sciences followed by studies in a specialized option. The general BASc program may be completed in four years, which includes eight terms. A BASc (honors) typically requires an additional two terms for thesis completion.

There are five major areas of concentration where the faculty members’ research strengths are interrelated with the undergraduate curriculum. Students should select one of the following options: electronics engineering option, computer engineering option, engineering physics option, systems option and biomedical engineering option.

ENSC courses emphasize learning, conceptualization, design and analysis. Built into the program are courses on social impacts of technology, finance, management, design methods and entrepreneurship intended to complement scientific studies. A special, integrated communications course completed throughout the program ensures that all graduates have the communication skills necessary to be effective engineers.

### Co-operative Education Work Experience

Every student completes a co-op education program of at least three work terms. After the first year, students typically alternate between academic and work terms. The goal is a complementary

combination of work in an industrial or research setting and study in one of the engineering options.

At least two of the three mandatory work terms must be completed in industry (ENSC 195, 295, 395). Students may participate in additional work terms but are encouraged to seek diversity in their experience. The three mandatory work terms may include one special co-op term (ENSC 196, 296, 396). Special co-op may include, but is not restricted to, self-directed, entrepreneurial, service or research co-op work terms. Permission of the engineering science co-op office is required.

An optional non-technical work term (ENSC 194) is also available through the engineering science co-op education office and is often completed after the first two study terms. ENSC 194 does not count toward the mandatory three course requirement.

The engineering science co-op program will also seek opportunities for students wishing to complete their thesis requirements in an industrial setting.

### BASc Requirements

Requirements of one of the five options must be completed. Each provides basic science, general studies, engineering science, specialized engineering and science, plus project and laboratory work.

For an honors in any option, a capstone project (ENSC 440) and an undergraduate thesis (ENSC 498 and 499) must be completed.

For a general degree with any option other than engineering physics and biomedical engineering, a capstone project (ENSC 440) must be completed. The engineering physics and biomedical engineering options are honors programs only.

Graduation with BASc (honors) requires both a CGPA and an upper division grade point average (UDGPA) of at least 3.0.

Students complete a three term co-op education program of practical experience in an appropriate industrial or research setting leading to a project under the technical direction of a practising engineer or scientist. The internship may be within the University but in most cases the work site is off campus. A member of the external organization and a school faculty member jointly supervise the project.

Specialized study is completed in one of five options: electronics engineering, computer engineering, engineering physics, systems and biomedical engineering (see below).

Although there is no strict requirement to follow these course sequences, but completing less may lead to scheduling and prerequisite problems in subsequent terms. Failure to complete courses identified with an asterisk in the designated term will almost certainly lead to such problems. Any term with fewer than 15 units requires prior approval by the director.

This program’s general studies section consists of non-technical courses which broaden education and develop awareness of social, economic and managerial factors affecting engineering and scientific work. All units of the engineering communication course must be completed. In complementary studies, at least one course must deal with science and technology within society and one with central issues, methodologies and thought processes of humanities and social sciences. Other complementary studies courses may contain these subjects or may be chosen from business, arts, humanities and social sciences. Permission may be required from the appropriate department, school or faculty to enrol in some courses. A pre-approved complementary studies course list is available from the school. Other courses may be acceptable with undergraduate curriculum committee chair approval.

## Engineering Science Common Core Courses and Typical Schedule

### Term One (Fall)

CHEM 121-4 General Chemistry and Laboratory  
CMPT 128-3 Introduction to Computing Science and Programming for Engineers\*  
ENSC 100-3 Engineering Technology and Society\*  
ENSC 101-1 Writing Process, Persuasion and Presentations\*  
MATH 151-3 Calculus I<sup>1</sup>  
PHYS 120-3 Modern Physics and Mechanics\*,<sup>2</sup>

17 units

### Term Two (Spring)

Cmpl I-3 first complementary elective<sup>3</sup>  
ENSC 102-1 Form, Style and Professional Genres\*  
ENSC 150-3 Introduction to Computer Design\*  
MATH 152-3 Calculus II\*  
MATH 232-3 Elementary Linear Algebra\*  
PHYS 121-3 Optics, Electricity and Magnetism\*,<sup>2</sup>  
PHYS 131-2 General Physics Laboratory I\*

18 units

### Term Three (Fall)

CHEM 122-2 General Chemistry II (PM)  
CHEM 126-2 General Chemistry Laboratory II (PM)  
CHEM 180-3 The Chemistry of Life (B)  
CMPT 225-3 Data Structures and Programming (B, PM)  
ECON 103-4 Principles of Microeconomics (E,P,S)  
ENSC 215-3 Microcontroller/Assembly Programming  
ENSC 220-3 Electric Circuits I\*  
MACM 101-3 Discrete Mathematics I\* (C,S)  
MATH 251-3 Calculus III\*  
MATH 310-3 Introduction to Ordinary Differential Equations\*  
PHYS 211-3 Intermediate Mechanics\* (P)  
STAT 270-3 Introduction to Probability and Statistics\* (C,E) (C), (B) 18 units  
for (E), (P), (S), pre-med (PM) concentration 19 units

### Term Four (Summer)

BISC 101-4 General Biology\* (PM)  
CMPT 225-3 Data Structures and Programming\* (C,S)  
ENSC 204-1 Graphical Communication for Engineering\*  
ENSC 224-3 Electronic Devices\* (C,E)  
ENSC 225-4 Microelectronics I\*  
ENSC 250-3 Introduction to Computer Architecture\*  
ENSC 320-3 Electric Circuits II\* (B,C,E,P, PM)  
KIN 208-3 Introduction to Physiological Systems\* (B, PM)  
MATH 254-3 Vector and Complex Analysis\* (B,E,P)  
PHYS 221-3 Intermediate Electricity and Magnetism\* (S)  
STAT 270-3 Introduction to Probability and Statistics\* (P,S) 17 units  
for pre-med (PM) concentration 18 units

\*should be completed in the designated term; consequences of deviating from this schedule are the responsibility of the student.

Courses are only required by the program option that appears in parenthesis next to them: B (biomedical engineering option, except pre-med concentration), PM (biomedical engineering, pre-med concentration), C (computer engineering option), E (electronics engineering option), P (engineering physics option), and S (systems option). As an example, a student in the systems option in his or her third term would be expected to complete 18 units.

<sup>1</sup>students may complete MATH 150 in place of MATH 151

<sup>2</sup>PHYS 120 can be replaced by either PHYS 125 or 140; PHYS 121 can be replaced by either PHYS 126 or 141; students with credit for both PHYS 140 and 141 are not required to complete PHYS 131

<sup>3</sup>must be an approved course; a pre-approved list of complementary studies courses is available from the

School of Engineering Science; biomedical signals and instrumentation concentration (BI), and rehabilitation and assistive devices (RD) must complete an acceptable Breadth-Humanities course.

### Biomedical Engineering Option

This option concerns engineering problems encountered in medical and surgical treatment, in rehabilitation procedures and assistive devices, in medical electronics, in biomedical imaging, and in biophotonics.

#### Concentrations

The biomedical engineering option is available in one of three concentrations: rehabilitation and assistive devices (RD); biomedical signals and instrumentation (BI); and pre-medical (PM). A 3.0 grade point average is required to remain in these concentrations. The following elective courses are recommended in each concentration. Suggestions for additional electives for all concentrations are available at [www.ensc.sfu.ca](http://www.ensc.sfu.ca).

#### Biomedical Signals and Instrumentation Concentration (BI)

Students who choose this concentration will complete two of the following engineering science electives  
 ENSC 425-4 Electronic System Design  
 ENSC 429-4 Digital Signal Processing  
 ENSC 474-4 Biomedical Signal and Image Processing  
 ENSC 476-4 Biophotonics

The other two required ENSC electives may be constrained by the need to satisfy prerequisites for the two choices from the above four possible courses.

#### Pre-medical Concentration (PM)

Students who choose this concentration should consider completing the following science electives.  
 CHEM 281-4 Organic Chemistry I  
 MBB 231-3 Cellular Biology and Biochemistry  
 and two of the following complementary electives are strongly recommended.  
 ENGL 101W-3 Introduction to Fiction  
 ENGL 102W-3 Introduction to Poetry  
 ENGL 103W-3 Introduction to Drama  
 ENGL 104W-3 Introduction to Prose Genres

#### Rehabilitation and Assistive Devices Concentration (RD)

Students who choose this concentration should consider completing the following science elective  
 KIN 448-3 Rehabilitation of Movement Control  
 and the following engineering science electives  
 ENSC 387-4 Introduction to Electro-Mechanical Sensors and Actuators  
 ENSC 429-4 Digital Signal Processing<sup>1</sup>  
 ENSC 472-4 Rehabilitation Engineering and Assistive Devices

### Courses and Typical Schedule

The courses and typical schedule for the degree are listed below.

#### Term Five (Spring)

ENSC 304-1 Human Factors and Usability Engineering\*  
 ENSC 330-4 Engineering Materials  
 ENSC 370-3 Biomedical Engineering Directions\*  
 ENSC 380-3 Linear Systems\*  
 KIN 201-3 Biomechanics\*  
 MACM 316-3 Numerical Methods  
 PHYS 321-3 Intermediate Electricity and Magnetism (BI, RD)\*  
 for biomedical signals and instrumentation (BI) concentration, and for rehabilitation and assistive devices (RD) concentration 20 units  
 for pre-medical (PM) concentration 17 units

#### Term Six (Fall)

CHEM 282-2 Organic Chemistry II (PM)  
 CHEM 286-2 Organic Chemistry Laboratory II (PM)  
 Ensc I-4 first Engineering Science elective<sup>2</sup>

ENSC 383-4 Feedback Control Systems\*  
 KIN 308-3 Experiments and Models in Physiology  
 Scie I-3 first Science elective<sup>4</sup>  
 STAT 270-3 Introduction to Probability and Statistics  
 17 units  
 for pre-medical (PM) concentration 21 units

#### Term Seven (Spring)

Ensc II-4 second Engineering Science elective<sup>2</sup> (BI, RD)  
 ENSC 305-1 Project Documentation and Team Dynamics\*  
 ENSC 350-3 Digital Systems Design  
 ENSC 372-4 Biomedical Instrumentation\*  
 ENSC 406-2 Social Responsibility and Professional Practice\*  
 ENSC 440-4 Capstone Engineering Science Project  
 MBB 222-3 Molecular Biology and Biochemistry (PM)  
 18 units  
 pre-medical (PM) concentration 17 units

#### Term Eight (Fall)

GERO 300-3 Introduction to Gerontology (BI, RD)  
 Ensc II-4 second Engineering Science elective<sup>2</sup> (PM)  
 Ensc III-4 third Engineering Science elective<sup>3</sup>  
 Ensc IV-4 fourth Engineering Science elective<sup>3</sup> (BI, RD)  
 ENSC 201-3 The Business of Engineering  
 Scie II-3 second science elective<sup>4</sup> 17 units  
 pre-medical (PM) concentration 14 units

#### Term Nine (Spring)

Students in the Rehabilitation and Assistive Devices (RD) concentration or the Biomedical Signals and Instrumentation (BI) concentration will complete the following.  
 ENSC 498-3 Engineering Science Thesis Proposal  
 ENSC 499-9 Engineering Science Undergraduate Thesis  
 for biomedical signals and instrumentation (BI) concentration, and for rehabilitation and assistive devices (RD) concentration 12 units

Students in the pre-medical (PM) concentration will complete the following.  
 BISC 102-4 General Biology  
 Cmpl II-3 second complementary studies elective<sup>5</sup>  
 ENSC 374-4 Biomedical Image Acquisition  
 Ensc IV-4 fourth Engineering Science elective<sup>3</sup>  
 MBB 321-3 Intermediary Metabolism  
 pre-medical (PM) concentration 18 units

\*should be completed in the designated term; consequences of deviating from this schedule are the responsibility of the student.

<sup>1</sup>ENSC 428 has prerequisite that must be satisfied

<sup>2</sup>must be a 300 or 400 division ENSC course. The defined concentrations above set some constraints on selection of electives.

<sup>3</sup>must be a 400 division ENSC course. The concentration chosen will set some constraints on selection of electives.

<sup>4</sup>must be an approved course; consult pre-approved electives list available from the school. See separate notes for pre-medical option.

<sup>5</sup>see earlier notes for complementary studies courses

**Note:** In the typical schedule shown above, honors students will start their thesis work (ENSC 498 and 499) between terms seven and eight. This work can be done on or off campus, either integrated with an optional (or mandatory) work term or as independent work with appropriate supervision.

### Computer Engineering Option

The dynamic, on-going development and application of computer and digital systems requires computer systems engineers to have a balanced capability in software and hardware, and a solid engineering base.

### Courses and Typical Schedule

The courses and typical schedule for both general and honors are listed. The notation (G) is for general degree requirements only, while (H) is for requirements applying to the honors degree only. Courses without (G) or (H) designations are required of both the general and honors students.

#### Term Five (Spring)

CMPT 275-4 Software Engineering\*  
 MACM 201-3 Discrete Mathematics II\*  
 ENSC 304-1 Human Factors and Usability Engineering\*  
 ENSC 350-3 Digital Systems Design  
 ENSC 351-4 Real Time and Embedded Systems\*  
 ENSC 380-3 Linear Systems\* 18 units

#### Term Six (Fall)

ECON 103-4 Principles of Microeconomics  
 ENSC 325-4 Microelectronics II\*  
 ENSC 327-4 Communication Systems\*  
 ENSC 383-4 Feedback Control Systems\*  
 Scie I-3 first science elective<sup>3</sup> 18 units

#### Term Seven (Spring)

CMPT 300-3 Operating Systems I  
 Ensc I-4 first Engineering Science elective<sup>2</sup>  
 ENSC 305-1 Project Documentation and Team Dynamics\*  
 ENSC 406-2 Social Responsibility and Professional Practice\*  
 ENSC 440-4 Capstone Engineering Science Project  
 MACM 316-3 Numerical Analysis I 17 units

#### Term Eight (Fall)

Cmpl II-3 second complementary studies elective<sup>1</sup>  
 Ensc II-4 second Engineering Science elective<sup>2</sup>  
 ENSC 201-3 The Business of Engineering  
 ENSC 450-4 VLSI Systems Design  
 Scie II-3 second science elective<sup>3</sup> 17 units

#### Additional Requirements for Honors

ENSC 498-3 Engineering Science Thesis Proposal (H)  
 ENSC 499-9 Engineering Science Undergraduate Thesis (H)

\*should be completed in the designated term. Consequences of deviating from this schedule are the responsibility of the student.

<sup>1</sup>must be an approved course. A pre-approved list of complementary studies courses is available from the School of Engineering Science.

<sup>2</sup>chosen from ENSC 424, 425, 426, 427, 428, 429, 452, 472, 474, 476, 481, 483, 488, 489, 495. Special topics courses in the 400 division that have been approved by the undergraduate curriculum committee chair and the director can be counted here. With permission of the undergraduate curriculum committee chair, students may replace one engineering science elective with an engineering science directed studies course or a special project laboratory course. Such replacements for an engineering science elective must have four units and be 400 division courses.

<sup>3</sup>must be an approved course; consult the pre-approved electives list available from the school. Under special circumstances, approval for other courses from the undergraduate curriculum committee chair may be granted.

**Note:** In the typical schedule shown above, honors students will start their thesis work (ENSC 498 and 499) between terms seven and eight. This work can be done on or off campus, either integrated with an optional (or mandatory) work term or as independent work with appropriate supervision.

### Electronics Engineering Option

This specialization within electrical engineering directly relates to microelectronics and its applications in communications, control and computing. Engineers

in this field design and fabricate systems utilizing electronic components and subsystems.

### Courses and Typical Schedule

The courses and typical schedule for both the general degree and the honors degree are listed below. The notation (G) is used for requirements applying to the general degree only, while the notation (H) is used for requirements applying to the honors degree only. Courses without (G) or (H) designations are required of both the general and honors students.

#### Term Five (Spring)

ENSC 304-1 Human Factors and Usability Engineering\*  
ENSC 330-4 Engineering Materials  
ENSC 350-3 Digital Systems Design  
ENSC 351-4 Real Time and Embedded Systems\*  
ENSC 380-3 Linear Systems\*  
PHYS 321-3 Intermediate Electricity and Magnetism\* 18 units

#### Term Six (Fall)

ENSC 325-4 Microelectronics II\*  
ENSC 327-4 Communication Systems\*  
ENSC 383-4 Feedback Control Systems\*  
PHYS 421-3 Electromagnetic Waves\*  
Scie I-3 science elective<sup>3</sup> 18 units

#### Term Seven (Spring)

ENSC 305-1 Project Documentation and Team Dynamics\*  
Ensc I-4 first Engineering Science elective<sup>2</sup>  
Ensc II-4 second Engineering Science elective<sup>2</sup>  
ENSC 406-2 Social Responsibility and Professional Practice\*  
ENSC 440-4 Capstone Engineering Science Project  
MACM 316-3 Numerical Analysis I 18 units

#### Term Eight (Fall)

Cmpl II-3 second complementary studies elective<sup>1</sup>  
Ensc III-4 third Engineering Science elective<sup>2</sup>  
Ensc IV-4 fourth Engineering Science elective<sup>2</sup>  
Ensc V-4 fifth Engineering Science elective<sup>2</sup> (G)  
ENSC 201-3 The Business of Engineering  
Tech I-3 technical (computing science, science or math) elective<sup>3</sup> (H)

#### Additional Requirements for Honors

ENSC 498-3 Engineering Science Thesis Proposal (H)  
ENSC 499-9 Engineering Science Undergraduate Thesis (H)

\*should be completed at this point in the program; consequences of deviations from this schedule are the responsibility of the student.

<sup>1</sup>must be an approved course. A pre-approved list of complementary studies courses is available from the School of Engineering Science.

<sup>2</sup>chosen from ENSC 424, 425, 426, 427, 428, 429, 450, 452, 472, 474, 476, 481, 483, 488, 489, 495. Special topics courses in the 400 division that have been approved by the undergraduate curriculum committee chair and the director can be counted here. With permission of the undergraduate curriculum committee chair, students may replace one engineering science elective with an engineering science directed studies course or a special project laboratory course. Such replacements for an engineering science elective must have four units and be 400 division courses.

<sup>3</sup>must be an approved course; consult the pre-approved electives list available from the school. Under special circumstances, approval for other courses from the undergraduate curriculum committee chair may be granted.

**Note:** In the typical schedule shown above, thesis work (ENSC 498 and 499) starts between terms seven and eight and can be done on or off campus, either integrated with an optional (or mandatory) work term or as independent work with supervision.

### Engineering Physics (Electronics) Option

This option prepares for work in engineering, applied sciences and is strongly dependent on a sound knowledge of physics and engineering fundamentals.

#### Courses and Typical Schedule

The courses and typical schedule for the honors degree are listed below. The engineering physics option is not available through the general degree.

#### Term Five (Spring)

ENSC 304-1 Human Factors and Usability Engineering\*  
ENSC 351-4 Real Time and Embedded Systems\*  
ENSC 380-3 Linear Systems\*  
PHYS 233-2 Introductory Physics Laboratory A\*  
PHYS 321-3 Intermediate Electricity and Magnetism\*  
PHYS 344-3 Thermal Physics  
PHYS 365-3 Semiconductor Device Physics 19 units

#### Term Six (Fall)

ENSC 325-4 Microelectronics II\*  
ENSC 327-4 Communication Systems\*  
ENSC 383-4 Feedback Control Systems\*  
PHYS 385-3 Quantum Physics  
PHYS 421-3 Electromagnetic Waves\* 18 units

#### Term Seven (Spring)

ENSC 305-1 Project Documentation and Team Dynamics\*  
ENSC 406-2 Social Responsibility and Professional Practice\*  
ENSC 440-4 Capstone Engineering Science Project  
Ensc I-4 first Engineering Science elective<sup>2</sup>  
Ensc II-4 second Engineering Science elective<sup>2</sup>  
Cmpl II-3 second complementary elective<sup>1</sup> 18 units

#### Term Eight (Fall)

Ensc III-4 third Engineering Science elective<sup>2</sup>  
ENSC 201-3 The Business of Engineering  
PHYS 332-3 Optics Laboratory  
PHYS 384-3 Methods of Theoretical Physics  
PHYS 455-3 Modern Optics  
Phys 4XX-3 physics elective 19 units

#### Other Requirements

ENSC 498-3 Engineering Science Thesis Proposal  
ENSC 499-9 Engineering Science Undergraduate Thesis

\*should be completed in the designated term; consequences of deviating from this schedule are the responsibility of the student.

<sup>1</sup>must be an approved course. A pre-approved list of complementary studies courses is available from the School of Engineering Science.

<sup>2</sup>chosen from ENSC 424, 425, 426, 427, 428, 429, 450, 452, 472, 474, 476, 481, 483, 488, 489, 495. Special topics courses in the 400 division that are approved by the undergraduate curriculum committee chair and the director can be counted here. With undergraduate curriculum committee chair approval, students may replace one engineering science elective with an engineering science directed studies course or a special project laboratory course. Such replacements for an engineering science elective must have four units and be 400 division courses.

**Note:** In the typical schedule shown above, thesis work (ENSC 498 and 499) starts between terms seven and eight and can be done on or off campus, either integrated with an optional (or mandatory) work term or as independent work with supervision.

### Systems Option

This option prepares students for careers in design and integration of computer-controlled machines, and for graduate study in robotics, control and mechatronic systems. Students integrate knowledge from electronic engineering, mechanical engineering, and computer engineering into the fundamental design process. This focused program includes study

of mechanical structures and mechanisms, electro-mechanical sensors and actuators, control engineering, and real-time systems. Electives may be used to tailor curriculum to specific interests.

#### Courses and Typical Schedule

The courses and typical schedule for both the general degree and the honors degree are listed below. The notation (G) is used for requirements applying to the general degree only, while the notation (H) is used for requirements applying to the honors degree only. Courses without (G) or (H) designations are required of both the general and honors students.

#### Term Five (Spring)

ENSC 230-4 Introduction to Mechanical Design\*  
ENSC 304-1 Human Factors and Usability Engineering\*  
ENSC 320-3 Electric Circuits II\*  
ENSC 330-4 Engineering Materials  
ENSC 351-4 Real Time and Embedded Systems\*  
ENSC 380-3 Linear Systems\* 19 units

#### Term Six (Fall)

Cmpl II-3 second complementary elective<sup>1</sup>  
ENSC 325-4 Microelectronics II\*  
ENSC 383-4 Feedback Control Systems\*  
ENSC 387-4 Introduction to Electromechanical Sensors and Actuators\*  
Scie I-3 science elective<sup>3</sup> 18 units

#### Term Seven (Spring)

Ensc I-4 first Engineering Science elective<sup>2</sup>  
ENSC 305-1 Project Documentation and Team Dynamics\*  
ENSC 406-2 Social Responsibility and Professional Practice\*  
ENSC 440-4 Capstone Engineering Science Project  
ENSC 483-4 Modern Control Systems\*  
MACM 316-3 Numerical Analysis I 18 units

#### Term Eight (Fall)

ENSC 201-3 The Business of Engineering  
ENSC 488-4 Introduction to Robotics\*  
ENSC 489-4 Computer Aided Design and Manufacturing\*  
Ensc II-4 second Engineering Science elective<sup>2</sup> 15 units

#### Additional Requirements for Honors

ENSC 498-3 Engineering Science Thesis Proposal (H)  
ENSC 499-9 Engineering Science Undergraduate Thesis (H)

\*should be completed in the designated term; consequences of deviating from this schedule are the responsibility of the student.

<sup>1</sup>must be an approved course. A pre-approved list of complementary studies courses is available from the School of Engineering Science.

<sup>2</sup>chosen from ENSC 424, 425, 426, 427, 428, 429, 450, 481, 483, 488, 489, 495. Special topics courses in the 400 division that have been approved by the undergraduate curriculum committee chair and the director can be counted here. With permission of the undergraduate curriculum committee chair, students may replace one engineering science elective with an engineering science directed studies course or a special project laboratory course. Such replacements for an engineering science elective must have four units and be 400 division courses.

<sup>3</sup>must be an approved course; consult the pre-approved electives list available from the school. Under special circumstances, approval for other courses from the undergraduate curriculum committee chair may be granted.

**Note:** In the typical schedule shown above, thesis work (ENSC 498 and 499) starts between terms seven and eight and can be done on or off campus, either integrated with an optional (or mandatory) work term or as independent work with supervision.

## Mechatronics Systems Engineering Major Program

This major program, located at Simon Fraser University Surrey, leads to a BASc degree. Students complete a total of 146 units as follows.

### Courses and Typical Schedule

Complete the following asterisk\* courses in the term indicated. The consequences of deviating from this schedule are the responsibility of the student.

#### Term One (Fall)

Students complete all of  
 CMPT 128-3 Introduction to Computing Science and Programming for Engineers\*  
 MATH 151-3 Calculus I\*<sup>1</sup>  
 PHYS 140-4 Studio Physics – Mechanics and Modern Physics  
 TECH 106-3 Spatial Thinking and Communicating  
 TECH 114-3 Technology in Everyday Contexts  
 and one of  
 CHEM 120-3 General Chemistry I  
 CHEM 121-4 General Chemistry and Laboratory I  
 19 or 20 units

#### Term Two (Spring)

Students complete all of  
 Cmpl I-3 first complementary elective\*  
 ENSC 182-3 Mechatronics Design I\*  
 MATH 152-3 Calculus II\*  
 MATH 232-3 Elementary Linear Algebra  
 PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism\*  
 TECH 101-3W Communication, Teamwork and Collaborative Process  
 19 units

#### Term Three (Fall)

Students complete all of  
 Cmpl II-3 second complementary elective\*  
 ENSC 220-3 Electric Circuits I  
 ENSC 231-3 Engineering Materials  
 ENSC 281-3 Statics and Strength of Materials\*  
 MATH 251-3 Calculus III\*  
 MATH 310-3 Introduction to Differential Equations  
 18 units

#### Term Four (Spring)

Students complete all of  
 ENSC 226-4 Electronic Circuits\*  
 ENSC 282-3 Kinematics and Dynamics of Rigid Bodies and Mechanisms\*  
 ENSC 283-3 Introduction to Fluid Mechanics\*  
 ENSC 380-3 Linear Systems\*  
 MACM 316-3 Numerical Analysis I  
 PHYS 231-3 Physics Laboratory II\*  
 19 units

#### Term Five (Fall)

Students complete all of  
 ENSC 311-3 The Business of Engineering I: Fundamentals\*  
 ENSC 329-4 Introduction to Digital Logic\*  
 ENSC 381-3 Systems Modelling and Simulation\*  
 ENSC 382-3 Machine Design\*  
 PHYS 344-3 Thermal Physics\*  
 ENSC 387-4 Introduction to Electromechanical Sensors and Actuators\*<sup>2</sup>  
 20 units

<sup>1</sup>students may complete MATH 150 in place of MATH 151

<sup>2</sup>must be an approved course; a pre-approved list of complementary studies courses is available from the School of Engineering Science

#### Term Six (Summer)

Students complete all of  
 ENSC 312-3 The Business of Engineering II: Applications and Commercialization\*  
 ENSC 331-3 Introduction to MEMS\*  
 ENSC 332-4 Microprocessors and Interfacing\*  
 ENSC 383-4 Feedback Control Systems\*<sup>3</sup>  
 ENSC 384-4 Mechatronics Design II\*<sup>3</sup>  
 18 units

<sup>3</sup>strongly recommended to be completed concurrently

#### Term Seven (Spring)

Students complete all of  
 ENSC II-4 second Engineering Science elective\*  
 ENSC 305-1 Project Documentation and Team Dynamics  
 ENSC 451-4 Real Time and Embedded Systems\*  
 ENSC 441-3 Capstone Design Technical Project I\*  
 ENSC I-4 First Engineering elective<sup>3</sup>  
 16 units

<sup>4</sup>chosen from a list of ENSC approved courses. With permission of the undergraduate curriculum committee chair, students may replace one engineering science elective with either a directed study or a special project laboratory course. Special topics courses that have been approved by the undergraduate curriculum committee chair and the director may be counted here.

#### Term Eight (Summer)

Students complete all of  
 ENSC 406-2 Engineering Ethics, Law and Professional Practice  
 ENSC 442-3 Capstone Design Technical Project II\*  
 ENSC 484-4 Industrial Control Systems\*  
 ENSC IV-4 fourth Engineering Science elective<sup>3</sup>  
 ENSC III-4 third Engineering Science elective<sup>3</sup>  
 17 units

<sup>4</sup>chosen from a list of ENSC approved courses. With undergraduate curriculum committee chair permission, students may replace one engineering science elective with either a directed study or a special project laboratory course. Special topics courses that have been approved by the undergraduate curriculum committee chair and the director may be counted here.

## Mechatronics Systems Engineering Honors Program

This honors program at the Surrey campus leads to a BASc (honors). Students complete 156 units which includes the same requirements as the mechatronics systems engineering major program (see "Mechatronics Systems Engineering Major Program" on page 86) and the following courses.

ENSC 498-3 Engineering Science Thesis Proposal  
 ENSC 499-9 Engineering Science Undergraduate Thesis

## Computer and Electronics Design Minor Program

### Admission Requirements

Entrance is open to all non-engineering science majors. Apply by letter to the school's admissions chair after completing a minimum of 15 units, including CMPT 150 or ENSC 150, with a cumulative GPA of at least 2.4. Enrolment is limited.

### Program Requirements

This program consists of computer engineering option and the electronics engineering option courses.

Students complete all of  
 ENSC 150-3 Introduction to Computer Design  
 ENSC 215-3 Microcontroller Interfacing and Assembly-Language Programming  
 ENSC 220-3 Electric Circuits I  
 ENSC 250-3 Introduction to Computer Architecture  
 ENSC 305-1 Project Documentation and Group Dynamics  
 ENSC 320-3 Electric Circuits II  
 ENSC 380-3 Linear Systems  
 ENSC 440-3 Capstone Engineering Science Project  
 plus at least one of  
 ENSC 225-4 Microelectronics I  
 ENSC 351-4 Real time and Embedded Systems

plus at least three, and no more than five (students cannot count the same course twice) of the following  
 ENSC 225-4 Microelectronics I  
 ENSC 325-4 Microelectronics II  
 ENSC 327-4 Communication Systems  
 ENSC 350-3 Digital Systems Design  
 ENSC 351-4 Real Time and Embedded Systems  
 ENSC 424-4 Multimedia Communications Engineering  
 ENSC 425-4 Electronic System Design  
 ENSC 427-4 Communication Networks  
 ENSC 429-4 Discrete Time Systems  
 ENSC 450-4 VLSI Systems Design  
 ENSC 489-4 Computer Aided Design and Manufacturing  
 ENSC 495-4 Introduction to Microelectronic Fabrication

The engineering science graduation GPA in the above courses must be 2.4 or better. If it drops below 2.4, the student may be required to withdraw.

## General Studies Program

9861 Applied Sciences Building, 778.782.4724 Tel,  
 778.782.5802 Fax, <http://fas.sfu.ca/programs/bgs>

### Advisor

Ms. M. Trautman BA, MEd (S Fraser), 778.782.8795

## Major Program

The non-specialist bachelor of general studies (applied sciences) degree offers a broad education with an applied orientation, and is available as a general applied sciences option or a double minor option.

### Admission Requirements

Faculty of Applied Sciences students may apply for admission to the general applied sciences option or the double minor option at any time. Students in other faculties may apply for the double minor option upon acceptance into two qualifying minors by the schools or departments concerned.

Limited spaces are available for students transferring to the general applied sciences option from other faculties. Admission is competitive, based on a GPA in upper division applied sciences courses. At least nine units of upper division applied sciences courses with a 2.25 GPA is required for admission.

Enrolment in the upper division courses of a particular school may be limited to those bachelor of general studies students who also meet the admission standards of that school. Admission to the BGS program may not be used to bypass the enrolment limitations of any other applied sciences program.

### Program Requirements

Students complete 120 units overall for the degree, including 45 upper division units. A 2.00 graduation CGPA and UD GPA is required.

### General Applied Sciences Option

Students complete 30 upper division Faculty of Science and Faculty of Applied Sciences units subject to the following.

- no more than nine units of these courses may be from the Faculty of Science
- Faculty of Applied Sciences residency requirements must be satisfied. See "Residency Requirements" on page 76.
- a 2.00 GPA is required on the courses used for the general applied sciences option.

For this requirement, MACM courses are counted as School of Computing Science courses.

**Double Minor Option**

Students may satisfy the double minor option by completing two minors (or extended minors), at least one of which must be in the Faculty of Applied Sciences.

## Geographic Information Science Program

9861 Applied Sciences Building

**Advisor**

Ms. M. Trautman BA, MEd (S Fraser),  
778.782.8795 Tel

Ms. R. Multani, 7126 Robert C. Brown Hall,  
778.782.4529 Tel

The School of Computing Science and the Department of Geography offers a major and honors leading to a bachelor of science.

**Admission Requirements**

Entry is via direct admission from high school, direct transfer from a recognized post-secondary institution, or internal transfer from within Simon Fraser University. Admission is competitive. A separate admission average for each entry route is established each term depending on available spaces and subject to the approval of the Dean of Applied Sciences.

Admission averages and calculations for direct program admission (from high school or post-secondary) are the same as the major program. Internal transfers are assessed on the lower division requirements GPA (see below). Only Simon Fraser University courses are used in GPA calculation. Grades from all course attempts (including repeats) are used equally to calculate the average. Apply anytime after at least 18 Simon Fraser University lower division units (100 or 200 division courses) are completed, and all 100 division requirements (completed at either Simon Fraser University or a BC community college) have been satisfied.

Students must maintain a 2.5 cumulative grade point average (CGPA) to remain in the program.

**Writing, Quantitative, and Breadth Requirements**

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7.

**Major Program****Lower Division Requirements**

Students complete all of  
CMPT 120-3 Introduction to Computing Science and Programming I  
CMPT 125-3 Introduction to Computing Science and Programming II  
CMPT 225-3 Data Structures and Programming  
GEOG 100-3 Human Geography I  
GEOG 111-3 Earth Systems  
GEOG 250-3 Cartography I  
GEOG 253-3 Aerial Photographic Interpretation  
GEOG 255-3 Geographical Information Science I

MACM 101-3 Discrete Mathematics I  
MACM 201-3 Discrete Mathematics II  
MATH 151-3 Calculus I  
MATH 152-3 Calculus II  
MATH 232-3 Applied Linear Algebra

and one of  
GEOG 213-3 Introduction to Geomorphology  
GEOG 214-3 Climate and Environment  
GEOG 215-3 Biogeography  
GEOG 221-3 Economic Geography  
GEOG 241-3 Social Geography  
GEOG 261-3 Introduction to Urban Geography

and one of  
GEOG 251-3 Quantitative Geography  
STAT 270-3 Introduction to Probability and Statistics (45 units)

**Upper Division Requirements**

Students complete all of  
CMPT 307-3 Data Structures and Algorithms  
CMPT 354-3 Database Systems I  
CMPT 361-3 Introduction to Computer Graphics

and one of  
CMPT 300-3 Operating Systems I  
CMPT 363-3 User Interface Design  
CMPT 371-3 Data Communications and Networking  
CMPT 384-3 Symbolic Computing

and three of  
GEOG 351-4 Cartography and Visualization  
GEOG 352-4 Spatial Analysis  
GEOG 353-4 Remote Sensing  
GEOG 355-4 Geographical Information Science II

and two of  
CMPT 406-3 Computational Geometry  
CMPT 412-3 Computational Vision  
CMPT 454-3 Database Systems II  
CMPT 461-3 Image Synthesis  
CMPT 470-3 Web-based Information Systems

and two of  
GEOG 451-4 Spatial Modelling  
GEOG 453W-4 Remote Sensing of Environment  
GEOG 455-4 Theoretical and Applied GIS

and four additional upper division units in physical or human geography. Students should consult with the program advisor in choosing these units.

and three additional upper division units in CMPT or MACM courses. (45 units)

**Honors Program****Lower Division Requirements**

CMPT 120-3 Introduction to Computing Science and Programming I  
CMPT 125-3 Introduction to Computing Science and Programming II  
CMPT 150-3 Introduction to Computer Design  
CMPT 225-3 Data Structures and Programming  
CMPT 275-4 Software Engineering I  
GEOG 100-3 Human Geography I  
GEOG 111-3 Earth Systems  
GEOG 250-3 Cartography I  
GEOG 253-3 Aerial Photographic Interpretation  
GEOG 255-3 Geographical Information Science I  
MACM 101-3 Discrete Mathematics I

MACM 201-3 Discrete Mathematics II  
MATH 151-3 Calculus I  
MATH 152-3 Calculus II  
MATH 232-3 Applied Linear Algebra

and one of  
GEOG 213-3 Introduction to Geomorphology  
GEOG 214-3 Climate and the Environment  
GEOG 215-3 Biogeography

and one of  
GEOG 221-3 Economic Geography  
GEOG 241-3 Social Geography  
GEOG 261-3 Introduction to Urban Geography

and one of  
GEOG 251-3 Quantitative Geography  
STAT 270-3 Introduction to Probability and Statistics (55 units)

**Upper Division Requirements**

Students complete all of  
CMPT 300-3 Operating Systems I  
CMPT 307-3 Data Structures and Algorithms  
CMPT 354-3 Database Systems I  
CMPT 361-3 Introduction to Computer Graphics  
CMPT 406-3 Computational Geometry  
CMPT 454-3 Database Systems II  
GEOG 491-4 Honors Essay  
MACM 316-3 Numerical Analysis I

and three of  
GEOG 351-4 Cartography and Visualization  
GEOG 352-4 Spatial Analysis  
GEOG 353-4 Remote Sensing  
GEOG 355-4 Geographical Information Science II

and three of  
CMPT 363-3 User Interface Design  
CMPT 371-3 Data Communications and Networking  
CMPT 384-3 Symbolic Computing  
CMPT 412-3 Computational Vision  
CMPT 461-3 Image Synthesis  
CMPT 470-3 Web-based Information Systems

and two of  
GEOG 451-4 Spatial Modelling  
GEOG 453W-4 Remote Sensing of Environment  
GEOG 455-4 Theoretical and Applied GIS

and four additional upper division units in physical or human geography. Students should consult with the geography program advisor when choosing these units. (58 units)

Admission, continuation and graduation are contingent upon maintaining 3.00 or better on all relevant grade point averages (cumulative GPA, upper division GPA, computing science GPA, computing science upper division GPA, geography GPA, geography upper division GPA).

**Co-operative Education**

Students are strongly encouraged to enrol in co-operative education. Geographic information science students will be in great demand while still completing the program. The number of co-op posting requests exceeds the supply by a large margin. Co-op employers are actively seeking students with broad GIS skills, especially programming, database management, and statistics, in addition to substantive knowledge in geography and resource management.

# Faculty of Arts and Social Sciences

6168 Academic Quadrangle, 778.782.4414 Tel,  
778.782.3033 Fax, [www.sfu.ca/arts](http://www.sfu.ca/arts)

## Dean

L. Cormack BA (Calg), MA, PhD (Tor)

## Associate Deans

P. Budra BA, MA, PhD (Tor)

P. McFetridge BA, MA, PhD (S Fraser)

## Assistant Dean

V.G. Rose BA (S Fraser), MBA (Tor)

## Advisors

Ms. C. de Lisser BA (S Fraser), 3020 Academic Quadrangle, 778.782.5921, [claired@sfu.ca](mailto:claired@sfu.ca)

Ms. E. Herrell BSc (Catolica de Chile), 3020 Academic Quadrangle, 778.782.3909, [elisa@sfu.ca](mailto:elisa@sfu.ca)

Mr. N.P. Navasero BA (S Fraser), 3020 Academic Quadrangle, 778.782.3338, [nnp@sfu.ca](mailto:nnp@sfu.ca)

## Undergraduate Degrees Offered

bachelor of arts (honors)  
bachelor of arts (joint honors)  
bachelor of arts  
bachelor of general studies

## Diplomas and Certificates Offered

certificate in African studies  
certificate in Chinese studies  
certificate in sustainable community development  
certificate in criminology (general)  
certificate in criminology (advanced)  
certificate in ethnic and intercultural relations  
certificate in explorations in the arts and social sciences  
certificate in family studies  
certificate in First Nations studies research  
certificate in First Nations language proficiency  
certificate in French Canadian studies  
certificate in French language proficiency  
certificate in German studies  
certificate in Hellenic studies  
certificate in Italian studies  
certificate in labor studies  
certificate in liberal arts  
certificate in religious studies  
certificate for senior citizens  
certificate in Spanish language  
certificate in spatial information systems  
certificate in teaching ESL linguistics  
certificate in urban studies  
post baccalaureate diploma  
post baccalaureate diploma in criminology  
post baccalaureate diploma in First Nations studies  
post baccalaureate diploma in French and education  
post baccalaureate diploma in gerontology  
post baccalaureate diploma in humanities  
post baccalaureate diploma in legal studies  
post baccalaureate diploma in social policy issues  
post baccalaureate diploma in sustainable community development  
post baccalaureate diploma in teaching English as a second language

## Program Enrichment

International Activities (see page 90)

Co-operative Education (see page 90)

## Student Responsibility

It is the responsibility of each student to be aware of faculty regulations as stated in this Calendar. Departmental and faculty advisors and staff are available for advice and guidance. However, the

ultimate responsibility for completeness and correctness of course selection, for compliance with and completion of program and degree requirements and for observance of regulations and deadlines rests with the student.

## Academic Advice

Each department in the Faculty of Arts and Social Sciences provides an advisory service to assist students in planning their program and course selection to satisfy degree requirements. Students who have declared a program (major, joint major, honors, extended minor, minor) in one of our departments should avail themselves of these services. Students who are registered in the bachelor of arts who have not yet declared a program, but have completed 60 units and students in the bachelor of general studies should seek advice from the faculty advisors in Arts Central (AQ 3020).

Students in all programs leading to Faculty of Arts and Social Sciences bachelor's degrees must consult an advisor

- prior to first enrolment at Simon Fraser University, and
- during that term when they are completing their 45th unit, and
- during that term when they are completing their 90th unit

Students in certificate and post baccalaureate diploma programs are governed by the requirements of the specific programs.

## Transfer into the Faculty of Arts and Social Sciences

Students currently enrolled in other Simon Fraser University Faculties must have a 2.0 grade point average, or greater, to enter the Faculty of Arts and Social Sciences (FASS).

Students who withdraw, or are required to withdraw, while in the FASS and are subsequently readmitted to the University will be permitted to re-enter the FASS, even though their Simon Fraser University cumulative grade point average is less than 2.00.

Students in Science One and Tech One may not transfer into the FASS until the end of the second term following their admission to the Science One or Tech One programs.

## Course Regulations

Students may count any Simon Fraser University course for which credit is received toward the bachelor of arts (BA), bachelor of fine arts (BFA), or bachelor of general studies (BGS) degrees with the exceptions of co-operative education courses, FAL X99 and FAN X99, EDUC 401, 402, 405 and 406.

Only the first five course duplications will count toward any degree completed in the Faculty of Arts and Social Sciences. See "Limits on Repeated Courses" on page 27.

A maximum of nine units completed through the Tri-Education Summer Institute may be used toward a Faculty of Arts and Social Sciences degree or post baccalaureate program.

Upper division courses completed within a BA, BFA or BGS can be used to satisfy the requirements of only one program. For example, upper division courses used to satisfy the upper division requirements of a major cannot be used to also satisfy the upper division requirements of a minor.

## Letters of Permission

Please see "Courses at Other Institutions/Letters of Permission" on page 28 and visit [www.sfu.ca/arts/current/LOP.html](http://www.sfu.ca/arts/current/LOP.html) for important information regarding letter of permission requests.

## Bachelor of Arts Program

Students can meet the bachelor of arts requirements through one of the following five options: a major program, a joint major program, two extended minor programs, an honors program, or a joint honors program. In addition to the degree requirements set out below, students may also fulfil the requirements for one or more additional extended minor(s) or minor(s).

## Residency and Transfer Credit Regulations

Students may use up to 60 units of transfer credit towards their Simon Fraser University degree. Students must complete a minimum of 60 units at Simon Fraser University, including at least 30 upper division Simon Fraser University units. No more than 15 upper division units can be completed outside of Simon Fraser University toward a major. In the case of a minor, a minimum of seven upper division units (eight upper division units for psychology) must be completed at Simon Fraser University.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements in their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for more information. Please note that the Faculty of Arts and Social Sciences BA and BFA students must complete 12 additional breadth units rather than the normal University regulation of six additional breadth units. Additional breadth units must be from outside the student's major and may or may not be B-designated (B-Hum, B-Soc, B-Sci courses). Students choosing to complete the BA degree with a joint major, joint honors, double major, or two extended minors may satisfy the breadth requirements (designated or not designated) with courses completed in either one or both disciplines.

## Major Program

To concentrate in a subject area, students may complete a major consisting of at least 30 upper division units in that subject area. A major provides a strong subject background and is preparation for a range of occupations, or for further study following graduation. The major program is the most common option chosen by students pursuing a BA degree.

At least 120 units are required, which include:

- at least 65 units in Faculty of Arts and Social Sciences subjects
- at least 45 upper division units, including at least 30 upper division units in a Faculty of Arts and Social Sciences major program; no more than 15 upper division units transferred from another institution may be used toward the requirements for a major
- lower division requirements for at least one Faculty of Arts and Social Sciences major
- satisfaction of the Faculty of Arts and Social Sciences writing, quantitative, and breadth requirements (see above)



**Note:** A department may designate up to eight units of program-related upper division courses offered by other departments as being acceptable in fulfilling part of the required units in a major program.

### Joint Major Program

A joint major is a combination of two subject areas. Students complete at least 20 upper division units in each of the two joint major subject areas. Students are advised to check individual department listings for possible additional requirements.

A joint major provides preparation for a range of occupations, or for further study following graduation.

At least 120 units are required, which include:

- at least 65 units in Faculty of Arts and Social Sciences subjects
- at least 45 units in upper division courses, which must include at least 20 upper division units in each of the two joint major subjects; no more than 15 upper division units transferred from another institution can be used toward this requirement
- lower division prerequisites for both joint major programs
- satisfaction of the Faculty of Arts and Social Sciences writing, quantitative and breadth requirements (see above)

**Note:** Students choosing to complete two separate majors (double major) will complete two major programs, with at least one major subject in the Faculty of Arts and Social Sciences. Therefore, students will complete at least 30 units of upper division courses in each of the two major subjects.

**Students completing two majors will graduate with one BA degree.**

### Extended Minor Program

Students wishing to prepare themselves in two subject areas, but not desiring to undertake a major or a joint major program, may complete an extended minor program consisting of two extended minors for the BA degree.

An extended minor consists of the lower division requirements for a major, plus the upper division requirements for a minor. At least seven upper division units counted toward this requirement must be completed at Simon Fraser University.

At least 120 units are required, which include:

- at least 65 units in Faculty of Arts and Social Sciences subjects
- at least 45 upper division units, including 30 units in two extended minor programs (at least 15 upper division units in each of two extended minor programs); at least seven upper division units (eight units for psychology) must be completed at Simon Fraser University toward an extended minor.
- lower division requirements for at least two extended minor programs; the requirements for an extended minor program are the same as the lower division requirements for a major program
- satisfaction of the Faculty of Arts and Social Sciences writing, quantitative and breadth requirements (see above)

**Note:** There are programs which have individually defined extended minors, but no majors. Students declaring this option must obtain approval from the advisors in their two extended minor departments, as well as the approval of the faculty advisor.

### Minor Program

All Faculty of Arts and Social Sciences minor programs require at least 15 upper division units within a single discipline unless otherwise specified in the Calendar. At least seven upper division units counted towards this requirement must be completed at Simon Fraser University.

### Honors Program

At least 132 units are required, which include:

- at least 65 units in Faculty of Arts and Social Sciences subjects
- at least 60 units in upper division courses, which must include at least 50 units in upper division courses in a Faculty of Arts and Social Sciences honors program; no more than 15 upper division units transferred from another institution can be used toward this requirement
- lower division prerequisites for at least one Arts and Social Sciences honors program
- satisfaction of the Faculty of Arts and Social Sciences writing, quantitative and breadth requirements (see above)

**Note:** A department may designate up to 12 units of program-related upper division courses offered by other departments as being acceptable in fulfilling part of the required upper division units in the honors program.

### Joint Honors Program

At least 132 units are required, which include:

- at least 65 units in Faculty of Arts and Social Sciences subjects
- at least 60 upper division units which must include at least 28 in upper division courses in each of the two honors subjects; no more than 15 upper division units transferred from another institution can be used
- lower division prerequisites for both honors programs
- satisfaction of the Faculty of Arts and Social Sciences writing, quantitative and breadth requirements (see above)
- satisfactory completion of an honors essay jointly supervised by and acceptable to both honors departments

Students must maintain a 3.0 GPA in upper division courses in each subject of the joint honors program.

### Program Declaration

Prior to or upon enrolling for the term in which the 61st unit is completed, students in the bachelor of arts program must formally declare and be accepted into a major or two extended minors and may apply for an honors program, subject to the regulations below. Program declaration establishes the exact major, or extended minor requirements for graduation as they appear in the Calendar in effect at the time of declaration. Students are urged to keep a copy of this Calendar, known as the Graduating Calendar, for reference.

Program requirements may be changed any time prior to graduation. A new formal declaration must be approved by the new program department and the Office of the Dean, Faculty of Arts and Social Sciences if a faculty change is involved. The Calendar then in effect becomes the new Graduating Calendar, and the requirements it specifies for the program must be fulfilled.

### Admission into an Honors Program

Program acceptance is contingent upon satisfying the entrance requirements of the department concerned. Applicants normally have a 3.0 GPA in subject(s) of the honors field. When admission is granted, the student then enrolls as an honors student. In order to continue, this 3.0 GPA must be maintained. Failure to do so will place the student in the corresponding general degree program. Students will still be subject to the regulations of the original graduating Calendar. If a student is subsequently reinstated into the honors program, the graduating Calendar is that which was in effect at the time of the original program acceptance.

### Graduation GPA Requirements

Please see "Grade Point Averages Needed for Graduation" on page 31 for current GPA requirements for graduation.

Individual departments may have additional GPA requirements for graduation. Please check individual department Calendar listings for further information.

Please note that the minimum GPA requirements for graduation differed during the following time periods: September 1965 to August 1991; September 1991 to August 2003. Please see the appropriate Calendar(s)\* for information about GPA requirements during these time periods.

\*Calendar in effect at the time of entry to Simon Fraser University and the Calendar that was in effect at the time of approval to credential and/or program.

### Second Bachelor of Arts Degree

Bachelor's degree holders may complete a second bachelor of arts (BA) degree, but are encouraged to determine whether a second BA degree is actually required for their purposes because post-degree studies may be more appropriate. For information regarding second BA degrees and/or post-degree studies, seek advice from the faculty advisors in Arts Central, located in 3020 Academic Quadrangle.

A student may not enrol in a second BA degree in a subject in which they already hold a degree. A student who has a minor in a particular subject may enrol in a second BA degree with a major or honors program in that subject. Students may not complete a bachelor of general studies as a second degree.

The minimum requirement for a second BA degree is completion of 60 units, including at least 45 upper division units. Prior completion of lower division requirements for the major program may be required or may be waived at the discretion of the department.

Second degree students complete one upper division writing (W) course and one quantitative (Q) course.

Residency requirements for the second BA require at least 45 Simon Fraser University units, including at least 30 in upper division.

Courses not used toward a previous degree (as determined by the institution awarding that degree) may be used to reduce the number required in the second BA degree where applicable. Courses extra to previous degrees may be counted toward the second BA degree if completed before admission into the second BA degree, to a maximum of 15 units, in accordance with faculty regulations. Students must obtain approval from a faculty advisor in Arts Central, located in 3020 Academic Quadrangle.

Second degree students may not complete courses at another institution through a letter of permission.

### Concurrent Degrees

Students have the option of completing two undergraduate degrees concurrently by meeting the requirements of a first bachelor's degree and the requirements of a second bachelor of arts (BA) degree. Students choosing this option will complete both degrees simultaneously and apply for graduation from both degrees in the same term.

In most instances, instead of two concurrent degrees, it may be preferable to complete two extended minors, a joint major, a double major or a joint honors program leading to one bachelor's degree. Students are encouraged to determine whether a second BA degree is actually required because, in many cases, post-degree studies may be more appropriate.

For information regarding concurrent degrees and/or post-degree studies, seek advice from faculty advisors in Arts Central, located in 3020 Academic Quadrangle.

## Bachelor of General Studies Program

This non-specialist degree program, administered within the Faculty of Arts and Social Sciences, is designed for students whose educational goals are not met by other, more structured, undergraduate degree programs. Students may complete one or more minors or extended minors (but no major), in any academic area(s) as part of the BGS degree. Students considering this program are strongly urged to consult the faculty advisor before declaring the BGS as their degree.

### Requirements

Students complete a minimum of 120 units, including at least 45 upper division units. The minimum GPA requirements for graduation are a GPA of 2.0 and a cumulative GPA of 2.0 calculated on all upper division courses completed, except duplicate courses.

University regulations governing the duplication of courses (see "Limits on Repeated Courses" on page 27) are rigorously applied in the Faculty of Arts and Social Sciences. No more than five course duplications will be allowed.

With the exception of co-op courses, FAL X99 and FAN X99, EDUC 401, 402, 405 and 406, courses completed from any faculty may be used to satisfy the degree requirements, but admission to courses is subject to the prerequisite requirements of the various departments.

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. For the University's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 7.

### Residency and Transfer Credit Regulations

Students admitted into the BGS in the fall of 2009 or later may use up to 60 units of transfer credit towards their Simon Fraser University degree. Students must complete a minimum of 60 units at Simon Fraser University, including at least 30 upper division Simon Fraser University units.

Students admitted into the BGS prior to the fall of 2009 may receive up to 90 units of transfer credit, according to the calendar in effect at the time of declaration.

### Graduation GPA Requirements

See "Grade Point Averages Needed for Graduation" on page 31 for current GPA graduation requirements. Individual departments may have additional GPA requirements for graduation. Please check individual department Calendar listings for further information.

Note that the minimum GPA graduation requirements differed during these time periods: September 1965 to August 1991; September 1991 to August 2003. See the appropriate Calendar(s)\* for information about GPA requirements during these time periods.

\*Calendar in effect at the time of entry to Simon Fraser University and the Calendar that was in effect at the time of approval to credential and/or program.

### Integrated Studies Program

#### Advisor

Ms. T. Mandic, 778.782.8655, tatjanam@sfu.ca, www.sfu.ca/integratedstudies

Information is available from the director of the Integrated Studies Program, Continuing Studies, at Simon Fraser University Vancouver. Integrated studies programs within the bachelor of general

studies degree are highly structured cohort-based programs that meet the educational needs of specific student groups. Such programs integrate liberal studies with knowledge and skills associated with a particular field of practice, or with a background common to its students. Students may undertake this degree option only through special admission to an individual program. Integrated studies programs are designed and structured in consultation with external agencies or employers and may have special locations, admission requirements and fee structures.

Because these programs may require and build upon varying levels of previous post-secondary education, related employment experience, and demonstrated intellectual maturity, the required number of units may be less than the normal 120 units. All such programs will require a minimum of 60 units in designated Simon Fraser University courses offered within the program, to include at least 45 upper division units.

Each integrated studies program will be governed by an academic steering committee. The curriculum, including both designated courses and total units, admission criteria, and any other special conditions for each individual integrated studies program will be approved in advance by the Faculty of Arts and Social Sciences curriculum committee.

## Program Enrichment

### International Activities

#### International Student Advisor

Mr. N.P. Navasero BA (S Fraser), 3020 Academic Quadrangle, 778.782.3338, npn@sfu.ca

### Double Degree Program with Monash University, Australia

Simon Fraser University's Faculty of Arts and Social Sciences, and Monash University's Faculty of Arts, have partnered to offer two complete degrees concurrently in both Canada and Australia. Students choose a major from one of criminology, international studies, or world literature, leading to a BA degree, or a minor in First Nations studies leading to a BGS degree, from Simon Fraser University. In addition, students will earn a BA (Global) degree from Monash University.

For more information, visit [www.sfu.ca/arts/undergraduate/monash](http://www.sfu.ca/arts/undergraduate/monash) or contact the advisor.

### Kefalonia Semester Abroad Program

This full-credit fall term program in Kefalonia, Greece, offered annually, is led by a Simon Fraser University faculty member. Students will learn about the language, literature, and culture of modern Greece and, through active participation in an archaeological excavation, also learn about the history of this region.

Students complete a total of 14 units including both of ARCH 339-5 Lab Practicum: The Material Culture of Greece and Excavation Finds Processing ARCH 435-6 Field Work Practicum

and a three-unit modern Greek language course (to be announced)

#### Eligibility

Applicants must be 19 years of age or older prior to departure, have completed a minimum of 45 units and be in good academic standing. Students should also have completed at least one Faculty of Arts and Social Sciences course.

### The application deadline is June 30.

For more information, including a list of information sessions and the program cost, see [www.sfu.ca/hellenic-studies/diggreece.html](http://www.sfu.ca/hellenic-studies/diggreece.html), or contact the Hellenic studies advisor at 778.782.8466 or email [hellenic@sfu.ca](mailto:hellenic@sfu.ca).

### Exchange

For a list of exchange destinations, application information and deadlines, please visit the SFU International website at [www.sfu.ca/international](http://www.sfu.ca/international).

### Field Schools

For an up-to-date list of field school destinations, visit [www.sfu.ca/international](http://www.sfu.ca/international).

### Co-operative Education Program

6046 Academic Quadrangle, 778.782.3041/5751/3776/5839 Tel, 778.782.5875 Fax, [www.sfu.ca/coop/arts](http://www.sfu.ca/coop/arts)

#### Co-ordinators

K. Binpal BA (Lanc)  
M. Fordham  
E. Lewis BA (S Fraser)

This program is available for students who wish to acquire practical experience with their academic programs. The student normally spends alternate terms on campus and in paid, study-related jobs.

Refer also to *Archaeology, Cognitive Science, Criminology, Economics, English, First Nations, French, Geography, History, Humanities, International Studies, Latin American Studies, Linguistics, Political Science, Psychology, Sociology/Anthropology, and Women's Studies* as well as the *Co-operative Education* sections of this Calendar.

Students who are completing programs in departments that do not list co-operative education practicum courses can enrol in LBRL 101, 201, 301, 401 and 402.

### Entry for Declared Major Students

The following are recommended prior to co-op education entry: one course from either set 2 or set 8 as listed under the *certificate in liberal arts* (page 91), and at least 12 units of required lower division courses in the major program.

### Entry for BGS and BEd Students

To be admitted to co-op education, students pursuing a bachelor of general studies or a bachelor of education must have completed a minimum of 30 units with a minimum CGPA of 2.75. Prior to admission, all students must complete

either

ENGL 199-3 Introduction to University Writing

or any two 100 division ENGL courses.

A quantitative research course in your area of interest is strongly recommended. Computer literacy is a requirement. For further information, contact one of the Faculty of Arts and Social Sciences co-operative education co-ordinators (see "Co-operative Education" on page 212 for a list of Faculty of Arts and Social Sciences co-op advisors).

### Requirements

To be admitted, students must have completed a minimum of 30 units with a minimum CGPA of 2.75. Prior to admission, all students must complete ENGL 199-3 University Writing (or any two 100 division English courses) PHIL 001-3 Critical Thinking

A quantitative research course in your area of interest is strongly recommended. Computer literacy is a requirement. See the Faculty of Arts and Social Sciences co-op co-ordinators for further information.

### Transfer Students

Transfer students should contact the co-ordinators in the first week of their first Simon Fraser University term. College transfer students who participated in co-op programs elsewhere may be credited with the terms already completed. Students contemplating transfer to the Simon Fraser University Faculty of Arts and Social Sciences co-op program should contact an admissions advisor in Student Services early.

## Post Baccalaureate Diploma Programs

The Faculty of Arts and Social Sciences offers disciplinary and interdisciplinary post baccalaureate diplomas (PBDs). See "Post Baccalaureate Diploma Program" on page 7. In addition to the specific PBD programs available, the Faculty of Arts and Social Sciences offers a PBD in Arts and Social Sciences. This program is comprised of 30 upper division units, of which at least 15 upper division units must be completed in the arts and social sciences discipline which most closely fits the learning goals of the student. Through this program, students can complete a PBD with a concentration of courses in a discipline that does not offer a specific PBD.

## Certificate Programs

The certificate programs below are administered by the Faculty of Arts and Social Sciences.

Units applied toward a certificate may not be applied toward any other Simon Fraser University certificate or diploma, but may also be applied toward major program or minor program requirements or toward a bachelor's degree under the normal regulations governing those programs.

## Certificate in Explorations in the Arts and Social Sciences

Simon Fraser University Surrey, Galleria 5, Central City, 250-13450 102nd Avenue, Surrey, BC V3T 0A3, 778.782.8731 Tel, surrey-arts@sfu.ca, www.surrey.sfu.ca/arts/expl

### Director

P.M. St. Pierre BA (Br Col), MA (Qu), PhD (Syd)

### Associate Professor

H. Dawkins BFA (Nova Scotia Art & Des), MA, PhD (Leeds)  
J. Marchbank BA (Strath), MA (Central London), PhD (Strath)

### Assistant Professors

S. Colby BA, MA (Vic, BC), PhD (Sus)\*  
S. Markey MA (York, Can), PhD (S Fraser)

### Advisor

Ms. M. Yao BA (Br Col), 778.782.8478 Tel, surrey-arts@sfu.ca

\*joint appointment with world literature

This interdisciplinary program provides a broad, coherent and stimulating introduction to university studies. Students explore ideas and issues in courses that introduce arts and social science perspectives to first year students. Students learn to question, research and think independently and they are encouraged to develop the communication and reasoning skills that are required to debate central ideas that shape society and community.

This cohort program, in which students complete core courses together as a group, is an excellent choice for first year students as they make the transition from high school to university.

Core courses are offered in fall and spring terms at Simon Fraser University Surrey during which students can also complete electives. Core courses are a foundation for the certificate which recognizes the completion of an individual plan for interdisciplinary inquiry.

The certificate is awarded upon completion of required and elective courses for a total of 27 units.

Students who completed the pilot program for explorations in arts and social sciences in the 2005/2006 academic year may be eligible for the certificate in explorations in arts and social sciences if

they complete all other requirements and obtain the permission of the director.

Certificate students complete a minimum of nine units from the following.

EXPL 110-3 Organising Society  
EXPL 120-3 Experiencing Society  
EXPL 130-3 Global Development: Issues and Patterns  
EXPL 140-3 Global Identities\*  
EXPL 145-3 Selected Topic\*

\*in exceptional circumstances, and with permission of the director, another 100 division Faculty of Arts and Social Sciences courses that is germane to a student's interest may be substituted.

plus both of

EXPL 150-3 Introduction to Research Approaches in the Social Sciences  
EXPL 160-3 Introduction to Research and Interpretation in the Arts

### Additional Requirements

After their first year, students are encouraged to meet with the director or student advisor for the program, to discuss their interdisciplinary interests. The remaining units for the certificate consist of courses chosen in relation to those interests, as well as the completion of at least one 300 division explorations capstone course (see below) A minimum of six units for the certificate must be at the 200 division or higher -- three units in arts or humanities disciplines and three units in social sciences.

Students must complete at least one of the following Explorations capstone courses  
EXPL 310-3 Selected Topic I\*  
EXPL 320-3 Selected Topic II\*

\*In exceptional circumstances, and with permission of the director, another 300 division Faculty of Arts and Social Sciences course that is germane to a student's interest may be substituted.

General University regulations pertaining to certificate programs also apply.

Courses completed for this certificate may also apply toward major or minor program requirements, or toward a bachelor's degree within normal University regulations.

Students who fail a core course must make a written request for permission to continue in the program.

### From First Year University to the Major

Students are encouraged to meet with the advisor about the major or minors being considered, and to prevent unnecessary education delays by planning ahead to meet program requirements. Programs may have enrolment limitations with competitive entry standards based on academic performance. Students who are unable to gain admission to such programs should consult the advisor regarding other options.

## Certificate in Liberal Arts

### Advisor

Ms. S. Cowan, 3020 Academic Quadrangle, 778.782.5426, secowan@sfu.ca, www.sfu.ca/arts/undergraduate/CLA.html

This program, which provides broad exposure to areas of knowledge and inquiry methods essential to a liberal education, is for students who desire breadth of learning. It may be completed in conjunction with a degree program, or by students not seeking a degree.

The certificate requires ten courses comprising at least 30 units from designated course lists. These courses, which include both lower and some upper division courses, were carefully chosen for suitability in providing accessible and valuable material.

## Course Sets

Applicable certificate courses are listed in 12 sets. Each set includes courses from a variety of University departments. For a certificate student to be acquainted with various fields of inquiry and approaches to knowledge, the ten required courses must be distributed across these sets as described below. See "Distribution Requirements" on page 92. A brief description of the kinds of courses in each set are as follows.

### Set 1 – Verbal Skills

These courses enhance the mastery of some basic tools of verbal reasoning and expression. They include courses on writing and critical thinking, and introductory language courses. Students who complete an introductory course in a language other than English are strongly urged to complete a second course in that language as part of their certificate program.

### Set 2 – The Study of Theory and Theory Building

These courses introduce the nature of explanatory systems in various fields of inquiry. They include various discipline courses that focus on dynamics of theory construction and historical evolution of theory within that discipline. Courses in this set provide appreciation for ways in which the processes of reasoning, argument, observation and analysis are included within the development of disciplines.

### Set 3 – The Analysis of Contemporary Issues

These courses examine current social problems and controversies, emphasizing the application of appropriate conceptual and investigative methods to areas of public concern. Courses in this set will give students some appreciation for the ways in which careful reasoning and disciplinary knowledge can be applied in clarifying the discussion of public issues.

### Set 4 – The Study of Literature

These courses introduce important literary works and to ways of understanding literary expression. They include courses on literature written in English and in other languages, as well as literature in translation.

### Set 5 – Fine and Performing Arts

These courses familiarize students with non-literary modes of artistic expression and with important works of art including history and criticism of arts forms courses.

### Set 6 – Studies in Culture and Civilization

These courses introduce a wide study of cultures and civilizations. They include courses that consider the development of human values, and that take comparative and interdisciplinary approaches to culture, as well as historical studies that include substantial attention to cultural themes.

### Set 7 – The Study of Period and Place

These courses study developments in human society with emphasis on historical or regional particularity, and introduce methods associated with such study. They include courses that focus on regions and regionalism, as well as on specific historical periods.

### Set 8 – Foundations of Social Science

These courses introduce fundamental concepts and investigation methods in social science disciplines.

### Set 9 – Social and Behavioral Analysis

These courses articulate an approach to social structures or to individual or group behavior and apply that perspective to an area of social investigation.

### Set 10 – Natural Science

These courses introduce methods that are basic to natural sciences and to at least one specific science.

### Set 11 – The Impact of Science and Technology

These courses investigate the social impact of developments in science, technology, and computational and quantitative methods.

**Set 12 – Quantitative Skills**

These courses enhance the mastery of mathematical skills and tools for quantitative reasoning. They include basic level mathematics and computing, and statistics oriented research methods courses.

**Distribution Requirements**

Eight of the required ten courses must be distributed among the above sets as follows. (See course lists for applicable courses.)

two courses drawn from any **TWO** of the sets 1-3  
two courses drawn from any **TWO** of the sets 4-6  
two courses drawn from any **TWO** of the sets 7-9  
two courses drawn from any **TWO** of the sets 10-12

The two additional courses required may be selected from any TWO sets.

Within these distribution requirements, students may select any listed courses, and may tailor choices to their academic needs and interests. Courses applied toward the certificate in liberal arts **may** also be applied to any degree program, but **may not** be applied to another certificate or diploma program.

**Course Lists**

A list of courses within each set, published annually, is available at Student Services Academic Advising, Arts Central (3020 Academic Quadrangle), and at [www.sfu.ca/arts/undergraduate/CLACourses.html](http://www.sfu.ca/arts/undergraduate/CLACourses.html). Lists include Senate approved courses for program inclusion and occasional courses approved for single offering. Some have prerequisites. In most instances, the specific prerequisites may also be completed within the certificate program. Consult the Calendar and course outlines to understand courses and prerequisites. Advice is available through department advisors, Arts Central (3020 Academic Quadrangle) and Student Services Academic Advising.

**Transfer Credit**

A maximum of 15 transfer units are permitted towards the certificate in liberal arts. Normally, only credit assigned as directly equivalent to a course regularly listed within the program may be transferred.

**Certificate for Senior Citizens****Advisor**

Mr. J. Benedict, 2300 Simon Fraser University Vancouver, 515 West Hastings Street, Vancouver, BC, V6B 5K3, 778.782.5212, [seniors@sfu.ca](mailto:seniors@sfu.ca), [www.sfu.ca/seniors](http://www.sfu.ca/seniors)

This innovative credit certificate offers maximum flexibility to seniors (aged 60 or better) who are interested in exploring what the University has to offer. Whether students enrol in a sampling of courses or wish to complete a full undergraduate degree, the certificate can be part of this academic plan.

**Admission Requirements**

Contact the advisor to learn more about the application process, and for further information. The advisor can also answer questions about individual learning objectives and will assist with developing a personalized education plan.

**Program Requirements**

Senior students (age 60 or better) must complete 30 undergraduate units (approximately 10 courses), with a minimum grade of C, calculated on all courses. Courses applied toward the certificate must be approved by the program director or other official appointed by the Dean of Arts and Social Sciences.

## Department of Archaeology

9635 Education Building, 778.782.3135 Tel,  
778.782.5666 Fax, [www.sfu.ca/archaeology](http://www.sfu.ca/archaeology)

**Chair**

A.C. D'Andrea BSc (Tor), MSc (Lond), PhD (Tor)

**Professors Emeriti**

R.L. Carlson BA, MA (Wash), PhD (Ariz)

K.R. Fladmark BA (Br Col), PhD (Calg)

D.E. Nelson BSc (Sask), PhD (McM)

**Professors**

D.V. Burley BA, MA (New Br), PhD (S Fraser)

A.C. D'Andrea BSc (Tor), MSc (Lond), PhD (Tor)

J.C. Driver MA (Camb), PhD (Calg), Provost and Vice-President Academic

B.M.F. Galdikas BA (Br Col), MA, PhD (Calif)

B.D. Hayden BA (Colorado), MA, PhD (Tor)

G.P. Nicholas BA (Franklin Pierce), MA (Missouri), PhD (Mass)

M.F. Skinner BA (Alta), PhD (Camb)

**Associate Professors**

M. Collard BA (Sheff), PhD (Liv), Canada Research Chair

R.W. Jamieson BSc (Trent), MA (William and Mary), PhD (Calg)

D. Lepofsky BA (Mich), MA (Br Col), PhD (Calif)

J.R. Welch BA (Hamilton), MA, PhD (Arizona), Canada Research Chair\*

D. Yang BSc (Lanzhou), MSc (Chin Acad Sc)

E.C. Yellowhorn BA, BSc (Calg), MA (S Fraser), PhD (McG)\*\*

**Assistant Professors**

a.g. ross BA, MA (Wash), PhD (Calif)\*\*

PhD (McG)\*\*

R.J. Reimer BA, MA (S Fraser)\*\*

**Senior Lecturer**

R.J. Muir BA (S Fraser), MA (Trent), PhD (S Fraser)

**Adjunct Professors**

R.R. Adams BA (Ore), MA, PhD (S Fraser)

J. Cybulski BA, MA (NY State), PhD (Tor)

J.P. Delgado BA (San Francisco), MA (E Carolina), PhD (S Fraser)

G.M. MacDonald LLD (Calg), PhD (Yale), FRSA, FRSC, CM

R.A. Lazenby BA, MA (S Fraser), PhD (McM)

A.D. McMillan BA (Sask), MA (Br Col), PhD (S Fraser)

M.C. Wilson BA (Calg), MA (Wyoming), PhD (Calg)

**Associate Members**

J.J. Clague, Department of Earth Sciences

P. Nepernaschy, Faculty of Health Sciences

**Advisor**

Ms. C. Papaiani, 9633A Education Building,

778.782.4687

\*joint appointment with resource and environmental management

\*\*joint appointment with First Nations studies

The department offers various programs leading to the BA degree. Students must meet requirements for the degree (described in the *Faculty of Arts and Social Sciences* section), should complete courses in some complementary disciplines, and should seek departmental advice early in their university careers.

**Recommended Courses**

The following courses are recommended.

SA 101 (recommended for majors and honors)  
STAT 203 (prerequisite for ARCH 376 which is recommended for majors and required for honors)

**Upper Division ARCH Course Groups**

Upper division archaeology courses are divided into the following groups.

**Group I – Core Program**

ARCH 372-5 Material Culture Analysis

ARCH 373-5 Human Osteology

ARCH 376-5 Quantitative Methods in Archaeology

ARCH 471W-5 Archaeological Theory

**Group II – Laboratory Courses**

ARCH 335-5 Special Laboratory Topics in Archaeology

ARCH 340-5 Zooarchaeology

ARCH 348-5 Archaeological Conservation

ARCH 349-5 Management of Archaeological Collections

ARCH 377-5 Historical Archaeology

ARCH 385-5 Paleoanthropology

ARCH 390-5 Archaeobotany

ARCH 432-5 Advanced Physical Anthropology

ARCH 442-5 Forensic Anthropology

ARCH 452-5 Introduction to Paleopathology

ARCH 485-5 Lithic Technology

**Group III – Regional Courses**

ARCH 321-3 Archaeology of Britain

ARCH 330W-3 Prehistory of Latin America

ARCH 338-3 Archaeology of China

ARCH 360-5 Native Cultures of North America

ARCH 370-3 Western Pacific Prehistory

ARCH 378-3 Pacific Northwest North America

ARCH 379-3 Archaeology of the American Southwest

**Group IV – Topical Courses**

ARCH 301-3 Prehistoric and Indigenous Art

ARCH 302-3 Art of Ancient Civilizations

ARCH 311-5 Archaeological Dating

ARCH 336-3 Special Topics in Prehistoric and Indigenous Art

ARCH 344-3 Primate Behavior

ARCH 365-3 Ecological Archaeology

ARCH 383-3 Molecular Bioarchaeology

ARCH 386-3 Archaeological Resource Management

ARCH 438-5 Geoarchaeology

Special topics and/or directed studies courses may substitute for group II, III or IV courses, provided the content suggests a suitable substitution, and written department consent is obtained prior to enrolment.

Students completing degree programs must fulfill writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information about University-wide requirements. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

**Writing, Quantitative, and Breadth Requirements**

Students completing degree programs must fulfill writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information about University-wide requirements. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

**Major Program****Lower Division Requirements**

ARCH 131-3 Human Origins

ARCH 201-3 Introduction to Archaeology

ARCH 272-3 Archaeology of the Old World

ARCH 273-3 Archaeology of the New World

**Upper Division Requirements**

Students complete at least 30 upper division archaeology units which must include

- at least three group I courses (ARCH 372, 471W, and either 373 or 376). It is strongly recommended that majors students, students interested in physical anthropology, and those contemplating graduate studies, complete all four group I courses.
- at least one group II course
- at least one group III course
- at least two group IV courses

If students complete both ARCH 373 and 376, they may use both as group I requirements, or use ARCH 373 as a group II requirement, or ARCH 376 as a group IV requirement.

## Honors Program

Archaeology majors who wish honors program admission must have a minimum 3.0 CGPA and department permission. To remain in the program, students must maintain that CGPA and successfully complete 132 units with 50 of those in upper division archaeology. As well as meeting group II, III, and IV requirements for the major, honors students complete all four group I courses, ARCH 498 and 499. See "Bachelor of Arts Program" on page 88.

## Minor Program

### Lower Division Requirements

ARCH 131-3 Human Origins  
ARCH 201-3 Introduction to Archaeology  
and one of  
ARCH 272-3 Archaeology of the Old World  
ARCH 273-3 Archaeology of the New World

### Upper Division Requirements

At least 16 units of upper division archaeology are required including at least one course from each of groups I, II, III and IV listed above.

## Extended Minor Program

This program consists of the lower division requirements for a major and the upper division requirements for an archaeology minor. Programs must be approved by the department advisor.

## Languages Other Than English

Those contemplating graduate work are advised to acquire a reading knowledge of at least one language other than English.

## Archaeology and Anthropology Joint Major Program

### Advisors

Ms. C. Papaiani, Department of Archaeology, 9633A Education Building, 778.782.4687

Ms. K. Payne, Department of Sociology and Anthropology, 5055 Academic Quadrangle, 778.782.3726

This program explores inter-relationships between anthropology and archaeology. Students should plan their program in consultation with both advisors.

### Lower Division Anthropology Requirements

Students complete the following courses.

SA 101-4 Introduction to Anthropology (A)  
SA 201W-4 Anthropology and Contemporary Life (A)  
SA 255-4 Introduction to Social Research (S or A)

plus one additional 200 division course chosen in anthropology and/or sociology/anthropology.

### Lower Division Archaeology Requirements

Students complete the following courses.

ARCH 131-3 Human Origins  
ARCH 201-3 Introduction to Archaeology  
ARCH 272-3 Archaeology of the Old World  
ARCH 273-3 Archaeology of the New World

## Upper Division Anthropology Requirements

At least 20 units of upper division anthropology are required including the following.

SA 301-4 Contemporary Ethnography (A)  
SA 356W-4 Ethnography and Qualitative Methods (S or A)  
SA 402-4 The Practice of Anthropology (A)

plus eight additional upper division units chosen from the Calendar list of anthropology (A) courses.

### Highly Recommended

SA 486-4 Aboriginal Peoples and British Columbia: Advanced Seminar (A)

## Upper Division Archaeology Requirements

Students complete at least 23 upper division archaeology units including one of  
ARCH 301-3 Prehistoric and Indigenous Art  
ARCH 386-3 Archaeological Resource Management  
and all of  
ARCH 360-5 Native Cultures of North America  
ARCH 372-5 Material Culture Analysis  
ARCH 471W-5 Archaeological Theory  
plus one group II archaeology course.  
ARCH 378 and 385 are strongly recommended.

## Archaeology and First Nations Studies Joint Major Program

See "Archaeology and First Nations Studies Joint Major Program" on page 108 for program information.

## Archaeology and Latin American Studies Joint Major Program

See "Joint Major Programs" on page 122.

## Co-operative Education

This program offers work experience in archaeology and physical anthropology and entails planned terms of study and employment (term practicums) in an area of the student's choice.

### Requirements

To be admitted, a major must have been declared and the student must have at least 45 units, with a minimum CGPA of 3.0. The following courses (or equivalent as approved by the department co-op education co-ordinator) are recommended.

Students complete both  
ARCH 131-3 Human Origins  
ARCH 201-3 Introduction to Archaeology  
and one of  
ARCH 272-3 Archaeology of the Old World  
ARCH 273-3 Archaeology of the New World  
and three of  
ARCH 372-5 Material Culture Analysis  
ARCH 373-5 Human Osteology  
ARCH 376-5 Quantitative Methods in Archaeology  
ARCH 377-5 Historical Archaeology  
ARCH 386-3 Archaeological Resource Management  
ARCH 442-5 Forensic Anthropology

Contact the co-op co-ordinator, undergraduate chair, and/or departmental assistant at least one term before the first work term to participate. See "Co-operative Education" on page 212 regarding job competition, student employer responsibilities, student fees, pay rates and evaluation. During work terms, co-op students are formally enrolled in a job practicum course and are assessed a fee.

Program continuance requires a minimum 3.0 CGPA in all courses. College transfer students must have at least 15 Simon Fraser University units to be eligible for co-op admission. Transfer students who participated in co-operative education programs elsewhere **may** be credited with the term(s) already completed pending evaluation and approval of the Simon Fraser University co-op program.

## Asia-Canada Program

5115 Academic Quadrangle, 778.782.3689 Tel, 778.782.4504 Fax, [www.sfu.ca/AsiaCanada](http://www.sfu.ca/AsiaCanada)

### Director

T. Kawasaki LLB (Doshisha), MA (Tor), PhD (Prin)\*

### Steering Committee

P. Crowe, Department of Humanities  
T. Kawasaki, Department of Humanities, Department of Political Science  
S. Kong, Department of Humanities  
D. Mirhady, Department of Humanities

### Advisor

Ms. C. Prisland, 5114 Academic Quadrangle, 778.782.4094, [prisland@sfu.ca](mailto:prisland@sfu.ca)

\*joint appointment with political science

This extended minor program investigates connections between contemporary Canadian society and culture, and a variety of Asian countries. Part of the program studies one or more Asian languages. The goal is to introduce students to the economic, social and cultural connections between Asian countries and Canada. The Asia-Canada extended minor along with another extended minor can be used toward a BA degree, or with a major in any bachelor's degree, or use it toward a bachelor of general studies.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 90.

## Extended Minor Program

### Lower Division Requirements

Students complete 18 units including  
ASC 101-3 Introduction to Asia-Canada Studies I  
ASC 102-3 Introduction to Asia-Canada Studies II

plus one of

ASC 200-3 Introduction to Chinese Civilization  
ASC 201-3 Introduction to Japanese Civilization  
ASC 202-3 Studies in Asian Cultures

plus one of

CNS 160-3 The Social Background of Canada  
CNS 210-3 Foundations of Canadian Culture  
HIST 102-3 Canada Since Confederation  
HIST 204-3 The Social History of Canada  
SA 100-4 Perspectives on Canadian Society

and six units of Chinese or Japanese or another Asian language (approved by the advisor). Students who can demonstrate prior knowledge and proficiency that is equivalent to a 100 division Asian language course should choose another Asian language or substitute the six language units with further lower division Asia-Canada courses. Students eligible for these options must have their language level assessed and receive prior approval from the director and advisor.

## Upper Division Requirements

Students complete 15 units including at least one of  
ASC 300-3 Asians and North Americans in Public  
Discourse  
ASC 301-3 Asia-Canada Identities: Experiences and  
Perspectives

and at least one other upper division Asia-Canada  
course.

**Note:** If both ASC 300 and 301 are completed,  
students can count one course toward fulfilling the  
remaining upper division requirements.

To fulfil the remaining nine required units, students  
must complete courses from the following. With prior  
permission from the director, students may count  
other Asia-Canada related courses at the upper  
division which do not appear on this list. Consult with  
the program advisor.

ASC 302-3 Selected Topics in Chinese Studies  
ASC 303-3 Selected Topics in Japanese Studies  
ASC 400-3 Selected Topics in Asia-Canada Studies  
ASC 401-3 Directed Studies  
BUS 431-3 Business with East Asian Countries  
ENGL 394-4 World Literature in English II\*  
HIST 366-4 Social History of China Since 1800  
HIST 368W-4 Selected Topics in the History of the  
Wider World\*  
HIST 371-4 The Asia-Pacific War in Modern  
Japanese History  
HIST 471-4 Women in Modern Japanese History  
HIST 479-4 Change, Conflict, and Resistance in  
Twentieth Century China  
HUM 331-4 Studies in Asian Religions  
HUM 340-4 Great Cities in Their Time\*  
HUM 350-4 Great Figures in the Humanistic  
Tradition\*  
HUM 383-4 Selected Topics in the Humanities III\*  
POL 335-4 Government and Politics: People's  
Republic of China I  
POL 336-4 Government and Politics: People's  
Republic of China II  
POL 381-4 Politics and Government of Japan I  
POL 382-4 Politics and Government of Japan II  
POL 430-4 Government and Politics: Selected Asian  
Nations

\*when the topic is Asia-Canada related. Consult the  
program advisor.

**Note:** Students are responsible for meeting the  
prerequisites for the upper division courses they are  
applying to the extended minor.

## Certificate in Chinese Studies

This program offers courses related to the study of  
China. Students receive an introduction to Chinese  
language and complete other related courses.

The program is offered by the Asia-Canada  
Program/Department of Humanities and is  
administered by the program advisory committee  
appointed by the Dean of Arts and Social Sciences.

## Admission Requirements

There are no specific admission requirements. See  
the Asia-Canada advisor for certificate program  
approval.

## Program Requirements

Students complete 24 units, of which 12 are earned  
by completing four required core courses. The  
remaining are selected from the electives list below.

### Core Courses (12 units)

Students complete one of  
ASC 200-3 Introduction to Chinese Civilization  
ASC 205-3 Field Studies in Chinese Culture

and all of  
CHIN 100-3 Mandarin Chinese I  
CHIN 101-3 Mandarin Chinese II

and one of  
HIST 254-3 China to 1800  
HIST 255-3 China Since 1800

Students who complete CHIN 151 and/or 152 may  
apply the credit to either the elective or required  
courses for the certificate for complete or partial  
replacement of CHIN 100/101/200/201.

### Electives (12 units)

ASC 202-3 Studies in Asian Cultures\*  
ASC 302-3 Selected Topics in Chinese Studies  
ASC 400-3 Selected Topics in Asia-Canada Studies\*  
BUS 431-3 Business with East Asian Countries\*  
CHIN 200-3 Mandarin Chinese III  
CHIN 201-3 Mandarin Chinese IV  
HIST 254-3 China to 1800 (or HIST 255)  
HIST 256-3 The People's Republic of China  
HIST 366-4 Social History of China Since 1800  
HIST 479-4 Change, Conflict, and Resistance in  
Twentieth Century China  
HUM 203-3 Great Texts in the Humanities III\*  
HUM 204-3 Great Religious Texts\*  
HUM 330-4 Religion in Context\*  
HUM 331-4 Studies in Asian Religions\*  
HUM 383-4 Selected Topics in the Humanities III\*  
POL 335-3 Government and Politics: People's  
Republic of China I  
POL 336-3 Government and Politics: People's  
Republic of China II  
SA 275-4 Asian Societies\*

\*when the topic is China related. Consult the program  
advisor.

With prior permission from the director, students may  
count other China-related courses which do not  
appear on this list. Consult with the program advisor.

# Behavioral Neuroscience Program

*Department of Biomedical Physiology and  
Kinesiology*

K9625, 778.782.3573 Tel, 778.782.3040 Fax,  
kin\_advisor@sfu.ca, www.neuroscience.sfu.ca

*Department of Psychology*

5246 Robert C. Brown Hall, psyc-advisor@sfu.ca  
778.782.3354 Tel, 778.782.3427 Fax

*Director*

M. Liotti MD (Naples), PhD (Parma)

The Department of Psychology and the Department  
of Biomedical Physiology and Kinesiology co-operate  
to offer this major and honors program leading to a  
bachelor of science or bachelor of science (honors) in  
the Faculty of Arts and Social Sciences or the Faculty  
of Science. The program is administered by a  
co-ordinating committee of two members each  
department. The committee chair, who serves as  
program director, is appointed from either of the two  
departments, alternating every two years.

## Admission

The admission requirements for the three possible  
entry routes appear below.

## High School Admission

Students pursuing this major via the Faculty of Arts  
and Social Sciences will satisfy the faculty's general  
admission requirements. Students seeking Faculty of  
Science admission to this major will satisfy the same  
admission requirements as students seeking  
admission into the Department of Biomedical  
Physiology and Kinesiology.

## Post Secondary Transfer and Internal Transfer Applicants

Post-secondary transfer applicants may apply after at  
least 18 Simon Fraser University units are completed.  
Post-secondary transfer and internal transfer  
applicants are required to achieve a 2.5 cumulative  
grade point average (CGPA) for admission.

As well, applicants must have completed the following  
courses with a grade of C or better.

BISC 101-4 General Biology  
CHEM 121-4 General Chemistry and Laboratory I  
KIN 142-3 Introduction to Kinesiology  
PSYC 100-3 Introduction to Psychology I  
PSYC 102-3 Introduction to Psychology II  
PSYC 201W-4 Introduction to Research Methods in  
Psychology  
PSYC 210-4 Introduction to Data Analysis in  
Psychology

and one of  
MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences

and one of  
PHYS 101-3 Physics for the Life Sciences I  
PHYS 120-3 Mechanics and Modern Physics  
PHYS 140-4 Studio Physics – Mechanics and  
Modern Physics

## Program Continuation

Students must maintain a 2.5 cumulative grade point  
average to remain in the program, and obtain a C  
grade or higher in all required courses.

## Major Program

This program requires 120 units: 60 required lower  
division, plus 45 upper division units including 42  
required upper division units plus three upper division  
Simon Fraser University elective units, plus six units  
designated Breadth-Humanities; plus nine lower or  
upper division Simon Fraser University elective units.

## Lower Division Requirements

Students complete all of the following 60 units.

### Biology

BISC 101-4 General Biology  
MBB 221-3 Cellular Biology and Biochemistry

### Chemistry

CHEM 121-4 General Chemistry and Laboratory I  
CHEM 122-2 General Chemistry II  
CHEM 281-4 Organic Chemistry I

### Kinesiology

KIN 142-3 Introduction to Kinesiology  
KIN 205-3 Introduction to Human Physiology  
KIN 207-3 Human Motor Systems

### Mathematics

MATH 154-3 Calculus for the Biological Sciences  
MATH 155-3 Calculus II for the Biological Sciences

### Physics

PHYS 101-3 Physics for the Life Sciences I  
PHYS 102-3 Physics for the Life Sciences II  
PHYS 130-2 Physics for the Life Sciences Laboratory

### Psychology

PSYC 100-3 Introduction to Psychology I  
PSYC 102-3 Introduction to Psychology II  
PSYC 201W-4 Introduction to Research Methods In  
Psychology  
PSYC 210-4 Introduction to Data Analysis in  
Psychology  
PSYC 221-3 Introduction to Cognitive Psychology  
PSYC 280-3 Introduction to Biological Psychology

## Upper Division Requirements

Students complete a total of 45 units including 42 required units as shown below.

### Kinesiology

Students complete 21 units including these 12 units.  
KIN 305-3 Human Physiology I  
KIN 306-3 Human Physiology II (Principles of Physiological Regulation)  
KIN 324-3 Principles of Human Anatomy  
KIN 426-3 Neuromuscular Anatomy

plus nine additional units selected from the following.  
KIN 336-3 Histology  
KIN 407-3 Human Physiology Laboratory  
KIN 415-3 Neural Control of Movement  
KIN 416-3 Control of Limb Mechanics  
KIN 446-3 Neurological Disorders  
KIN 448-3 Rehabilitation of Movement Control  
KIN 461-3 Physiological Aspects of Aging  
KIN 467-3 Human Motor Control

### Psychology

Students complete 21 units including these 12 units.  
PSYC 300W-3 Critical Analysis of Issues in Psychology  
PSYC 381-3 Behavioral Endocrinology  
PSYC 382-3 Cognitive Neuroscience  
PSYC 388-3 Biological Rhythms and Sleep

plus nine additional units selected from the following.  
PSYC 303-3 Perception  
PSYC 330-3 Attention  
PSYC 335-3 Sensation  
PSYC 383-3 Psychopharmacology  
PSYC 384-3 Developmental Psychobiology  
PSYC 386-4 Laboratory in Behavioral Neuroscience  
PSYC 387-3 Human Neuropsychology  
PSYC 480-4 Selected Topics in Biological Psychology I  
PSYC 482-4 Selected Topics in Biological Psychology II  
PSYC 491-3 Selected Topics in Psychology  
PSYC 493-3 Directed Studies  
PSYC 494-3 Directed Studies  
PSYC 495-3 Directed Studies

plus three upper division elective units.

## Breadth, Quantitative and Writing Intensive Requirements

A minimum of six units of designated humanities breadth (B-Hum) courses must be completed. The social sciences breadth (B-Soc), science breadth (B-Sci), undesignated breadth (UB) and quantitative (Q) requirements are satisfied through completion of the behavioral neuroscience lower division required courses so no additional course work is required. As well, the writing intensive requirement is satisfied by the completion of required courses PSYC 201W and 300 W. For more information, see [www.sfu.ca/ugcr](http://www.sfu.ca/ugcr).

## Honors Program

This program is for behavioral neuroscience major students who wish to pursue advanced study.

## Admission Requirements

To apply for admission, students must have completed a minimum of 60 units in the behavioral neuroscience major program with a minimum 3.00 cumulative grade point average (CGPA). Applicants complete a program approval form that is available at [www.neuroscience.sfu.ca](http://www.neuroscience.sfu.ca) and submit this, together with a recent unofficial transcript, to the chair of the behavioral neuroscience co-ordinating committee.

## Graduation Requirements

A minimum of 132 units is required consisting of the major program requirements (see above) plus one of KIN 457-3 Behavioral Neuroscience Undergraduate Honors Thesis Proposal

PSYC 457-3 Behavioral Neuroscience Undergraduate Honors Thesis Proposal

and one of

KIN 459-9 Behavioral Neuroscience Undergraduate Honors Thesis

PSYC 459-9 Behavioral Neuroscience Undergraduate Honors Thesis

At least 60 upper division units including 50 in upper division psychology and kinesiology are required with the following CGPAs: an overall University CGPA of 3.00; an overall upper division CGPA of 3.00; an overall behavioral neuroscience CGPA of 3.0 calculated on lower and upper division requirements; an upper division behavioral neuroscience CGPA of 3.00 calculated on upper division requirements.

## Centre for Canadian Studies

*Students will no longer be admitted to the Canadian studies major, minor, honors or joint major programs effective for the fall 2009 term. Also, Canadian studies courses will not be offered after the summer 2009 term. Students contemplating entering one of these programs are advised to check with the advisor.*

6067 Academic Quadrangle, 778.782.4293 Tel, 778.782.4786 Fax, [www.sfu.ca/cns](http://www.sfu.ca/cns)

Director

(to be announced)

Associated Faculty

## Faculty of Applied Sciences

### School of Communication

R.S. Anderson, E. Balka, A.C.M. Beale, Z. Druick, R. Gruneau, D. Gutstein, R. Hackett, G. McCarron, C.A. Murray, R.K. Smith

## Faculty of Arts and Social Sciences

### Department of Archaeology

D.V. Burley, J. Driver, K.R. Fladmark, M.F. Skinner

### Centre for Distance Education

K. McManus

### School for the Contemporary Arts

C. Browne

### School of Criminology

P.J. Brantingham, D.F. Cousineau, R. Gordon, C.T. Griffiths, J.A. Osborne, S.N. Verdun-Jones

### Department of Economics

J.F. Chant, J.W. Dean, D.J. DeVoretz, M.A. Lebowitz, C.G. Reed, R.W. Schwindt, Z.A. Spindler

### Department of English

S. Djwa, C. Gerson, R.A. Miki, D. Stouck, P.M. St. Pierre

### Department of French

J. Calderon, R. Canac-Marquis, R. Davison, L. Frappier, C. Guibault, M-E. Lapointe, S. Steele, P. Wrenn

### Department of Geography

N.K. Blomley, B.E. Bradshaw, A.M. Gill, M. Hayes, R. Hayter, P.M. Koroschil, J.T. Pierce, M.L. Roseland

### Department of History

D. Gagan, H.J.M. Johnston, M. Leier, J.I. Little, A. Seager

### Department of Humanities

I. Angus, K. Mezei

## Department of Political Science

M.G. Cohen, L. Dobuzinskis, A. Heard, M. Howlett, D. Laycock, S. McBride, P.J. Smith

## Department of Sociology and Anthropology

D. Culhane, N. Dyck, K. Froschauer, A.T. McLaren, G.B. Teeple

## Department of Women's Studies

M.G. Cohen

## Faculty of Business Administration

G.A. Mauser, J.G. Richards, W.C. Wedley, M. Wexler

## Faculty of Education

J.D. Beynon, S.C. de Castell, A.A. Obadia

## Faculty of Science

### Department of Biological Sciences

R.W. Mathewes

## Library

J. Corse

Advisor

Ms. L. Kool BA (S Fraser), 778.782.3588 Tel, [polda@sfu.ca](mailto:polda@sfu.ca)

The Centre for Canadian Studies promotes study and understanding of Canada from a comprehensive cultural, social, political and economic perspective, emphasizing both historical context and contemporaneous development. The centre fully utilizes programs developed by other academic departments that contain relevant Canadian subject matter, and offers limited interdisciplinary courses that integrate knowledge from several relevant disciplines.

For those with a predominant interest in Canadian studies, a major and honors program is provided. The centre also accommodates students whose primary interest is in another discipline. Such students may enrol in a joint major or honors program, combining specialization in the department of their choice with complementary work in Canadian studies.

A certificate in French Canadian studies may be completed concurrently with, and as part of, specialization in Canadian studies honors, major or minor programs, or independent of specialization.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

## Major Program

The requirements are as follows. See "Major Program" on page 6 for additional information.

## Lower Division Requirements

Students complete both of  
CNS 160-3 The Social Background of Canada  
HIST 102W-3 Canada Since Confederation

and two of

GEOG 162-3 Canada  
POL 221-3 Introduction to Canadian Government  
POL 222-3 Introduction to Canadian Politics  
POL 223-3 Canadian Political Economy (or CNS 280)  
SA 100W-4 Perspectives on Canadian Society

and one of

CNS 210-3 Foundations of Canadian Culture  
CNS 250-3 Perspectives on the Environment in Canada  
CNS 260-3 Screening Canadian Experience

Students must demonstrate a working knowledge of French which is determined by completing FREN 122, or the former FREN 298, or equivalent, or by passing a placement exam at this level.

### Upper Division Requirements

Students complete 30 upper division units minimum, including at least four upper division CNS courses plus 18 additional upper division Canadian studies/Canadian content units. No more than 12 may be from curriculum of any single department or program other than Canadian studies.

### Distribution Requirements

To ensure adequate breadth of knowledge, students must complete at least eight required key courses from at least five departments having courses recognized as carrying Canadian studies credit. These courses can be both upper and lower division.

### Honors Program

For honors, students complete the same lower division courses and meet the same distribution requirements that apply to the Canadian Studies major, in addition to the following courses.

### Lower Division Requirements

Students complete three of  
GEOG 162-3 Canada  
HIST 101-3 Canada to Confederation  
POL 221-3 Introduction to Canadian Government  
POL 222-3 Introduction to Canadian Politics  
POL 223-3 Canadian Political Economy (or CNS 280)  
SA 100W-4 Perspectives on Canadian Society

### Upper Division Requirements

Students must complete a minimum of 50 upper division units, including  
CNS 495-5 Canadian Studies Honors Essay

Four additional upper division CNS courses must be completed, plus 33 additional upper division units in Canadian studies/Canadian content. No more than 18 units may be from curriculum of any single department or program other than Canadian studies.

Honors students must demonstrate functional bilingual English/French proficiency by completing FREN 221. See "Joint Honors Program" on page 96 regarding level of entry and course challenge.

### Minor Program

Students complete nine Canadian studies lower division units from the following.

CNS 160-3 The Social Background of Canada  
CNS 210-3 Foundations of Canadian Culture  
CNS 250-3 Perspectives on the Environment in Canada  
CNS 260-3 Screening Canadian Experience  
CNS 280-3 Canadian Political Economy (or POL 223)

Also, 15 units of upper division Canadian studies/Canadian content are required, one of which must be a CNS upper division course.

Students completing this minor with a major, minor or honors in another department or program may not count any Canadian content course used by that department or program as part of the minor. A working knowledge of French is recommended. Minor students do not satisfy key course requirements.

### Extended Minor Program

This program consists of the lower division requirements for a major and the upper division requirements for a minor. Certain other criteria may be set by individual departments. Students must have their program approved by the advisor.

## Joint Major Programs

Canadian Studies joint majors are available with the Departments of Archaeology, Criminology, English, Geography, History, Political Science, and Sociology and Anthropology, and the School of Communication.

Exception for a history joint major (see page 96), students complete all requirements for a Canadian studies major and the other subject. Any lower division course that counts toward the separate Canadian studies requirements and for the other subject may count towards both. Up to 12 upper division units in both Canadian studies and the other subject may count toward the upper division requirements of both. A joint major in Canadian studies and another subject that also specifies 30 upper division units will therefore require a total of 48 upper division units in the two subjects (30 Canadian studies plus 30 in the other subject minus 12 overlap). Joint majors complete all key courses listed for the other department's major.

### Criminology and Canadian Studies Joint Major Program

See "Criminology and Canadian Studies Joint Major Program" on page 102.

### Canadian Studies and Sociology and/or Anthropology Joint Major Program

There are three joint major combinations of Canadian studies with sociology and anthropology. The total upper division unit requirement for this is 58 (30 Canadian studies plus 20 sociology plus 20 anthropology minus 12 overlaps).

### Canadian Studies and History Joint Major Program

Students complete all Canadian Studies major requirements plus 24 upper division history units, of which 12 must be 400 division. All upper division courses must be distributed within groups 1, 2 and 3. Students complete at least two from any two groups, and one from the remaining group. See "Major Program" on page 116 for the three groups.

## Joint Honors Program

Students complete all requirements for a Canadian studies major and honors in the other subject. Any lower division course that counts toward the separate Canadian studies requirements and the other subject may count towards both. Up to 15 upper division units in both Canadian studies and the other subject may be used toward the upper division requirements of both. Joint honors in Canadian studies and another subject that require 50 upper division units will therefore require 65 upper division units in the two subjects (30 CNS plus 50 in the other subject minus 15 overlap). For joint honors with sociology or anthropology, 75 upper division units are required (30 CNS plus 28 sociology plus 28 anthropology plus four additional sociology or anthropology minus 15 overlap with Canadian studies).

Students also complete the key overlap courses specified below for the Canadian studies joint major and the other subject, and the French language qualification specified above. To determine the French language entry level, a Department of French placement test is required. Students may challenge FREN 210, 211, 221 and 222. See "Course Challenge" on page 28.

## Canadian Content Courses

There are two categories that carry Canadian studies credit. 'Internal' Canadian studies (CNS) courses are multidisciplinary or may be special topics courses,

and are unique to the Canadian studies curriculum. See "Canadian Studies CNS" on page 327.

The other category comprises predominantly Canadian content courses offered by other departments (listed below). Some are considered key and are identified below each departmental listing. Asterisked courses (\*) completed for Canadian studies credit require the approval of the Canadian studies director. Additional courses may be approved for Canadian studies credit while others may be dropped. Check with the centre for a current list.

## Faculty of Applied Sciences

### School of Communication

CMNS 130-3 Explorations in Mass Communication  
CMNS 235-3 Introduction to Journalism in Canada  
CMNS 324-4 Media, Sports and Popular Culture  
CMNS 331-4 News Discourse as Political Communication  
CMNS 333-4 Broadcasting Policy in the Global Context  
CMNS 334-4 Cultural Policy  
CMNS 336-4 Telecommunication Regulation in North America  
CMNS 342-4 Science and Public Policy: Risk Communication\*  
CMNS 353-4 Social Contexts of Information Technology\*  
CMNS 371-4 The Structure of the Book Publishing Industry in Canada  
CMNS 372-4 The Publishing Process  
CMNS 375-4 Magazine Publishing  
CMNS 433-4 Issues in Communication and Cultural Policy  
CMNS 437-4 Media Democratization: From Critique to Transformation  
CMNS 446-4 The Communication of Science and the Transfer of Technology\*  
CMNS 453-4 Issues in the Information Society\*  
CMNS 454-4 Computer Mediated Work and Workplace Communication\*  
CMNS 456-4 Communication to Mitigate Disasters  
CMNS 472-4 Books, Markets and Readers\*  
CMNS 474-4 The Business of Publishing  
*Key courses for Communication: CMNS 230, 331; FREN 122 or the former FREN 298*

## Faculty of Arts and Social Sciences

### Department of Archaeology

ARCH 223-3 The Prehistory of Canada  
ARCH 332-3 Special Topics in Archaeology I\*  
ARCH 333-3 Special Topics in Archaeology II\*  
ARCH 334-3 Special Topics in Archaeology III\*  
ARCH 335-5 Special Laboratory Topics in Archaeology\*  
ARCH 336-3 Special Topics in Prehistoric and Indigenous Art\*  
ARCH 360-5 Native Cultures of North America  
ARCH 378-3 Pacific Northwest North America  
*Key courses for Archaeology: ARCH 223, 360, 378*

### School of Criminology

CRIM 131-3 Introduction to the Criminal Justice System – A Total System Approach  
CRIM 135-3 Introduction to Canadian Law and Legal Institutions: A Criminal Justice Perspective  
CRIM 230-3 Criminal Law  
CRIM 231-3 Introduction to the Judicial Process  
CRIM 311-3 Minorities and the Criminal Justice System  
CRIM 330-3 Criminal Procedure and Evidence  
CRIM 331-3 Advanced Criminal Law  
CRIM 335-3 Human Rights and Civil Liberties  
CRIM 411-3 Indigenous Peoples, Crime and Criminal Justice  
*Key courses for Criminology: CRIM 131, 135, 230, 231, 330, 335*



**School for the Contemporary Arts**

FPA 236-3 Cinema in Canada

*Key courses for Contemporary Arts: FPA 236***Department of Economics**

BUEC 280-3 Introduction to Labor Economics

BUEC 384-3 Industrial Relations

BUEC 391-3 Law in the Economic Society

BUEC 396-3 The Structure of Industry

BUEC 397-5 Government and Business\*

BUEC 433-5 Forecasting in Business and Economics

ECON 261-3 Resources and the Economy of British Columbia

ECON 353-5 Economic History of Canada

ECON 362-4 Economics of Natural Resources\*

ECON 367-3 Transportation

ECON 368-3 Regional Economic Analysis\*

ECON 381-5 Labor Economics

ECON 390-3 Canadian Economic Policy

ECON 410-3 Seminar in Monetary Theory\*

ECON 480-3 Seminar in the Economics of Labor Market Policy

ECON 483-3 Selected Topics in Economics\*

ECON 484-3 Selected Topics in Economics\*

ECON 490-5 Seminar in Public Choice\*

ECON 496-3 Selected Topics in Economics\*

ECON 498-3 Directed Studies\*

*Key courses for Economics: BUEC 391, ECON 353; any three of 381; BUEC 384, 485; ECON 390; BUEC 396, 397***Department of English**

ENGL 354-4 Canadian Literature to 1920

ENGL 357-4 Canadian Literature Since 1920

ENGL 359-4 Literature of British Columbia

ENGL 455W-4 Topics in Canadian Literature

*Key courses for English: ENGL 354, 357, 359***First Nations Studies Program**

FNST 101-3 The Culture, Languages and Origins of Canada's First Peoples

FNST 201-3 Canadian Aboriginal People's

Perspective on History

*Key courses for First Nations Studies: FNST 101, 201***Department of French**

FREN 230-3 Introduction to French-Canadian Literature

FREN 342-4 Literature in Translation from the World\*

FREN 422-3 Canadian French

FREN 430-3 The French-Canadian Novel and Theatre

FREN 480-2 Seminar I\*

*Key courses for French: FREN 230, 422, 430, 480***Department of Geography**

GEOG 162-3 Canada

GEOG 264-3 Canadian Cities

GEOG 265-3 Geography of British Columbia

GEOG 322-4 World Resources

GEOG 323-4 Industrial Location

GEOG 426-4 Industrial Change and Local Development

GEOG 441-4 Cities, Space and Politics

GEOG 444-4 Regional Development and Planning II

GEOG 445-4 Resource Planning

*Key courses for Geography: GEOG 162, 462; one of 469***Department of History**

HIST 101-3 Canada to Confederation

HIST 102-3 Canada Since Confederation

HIST 201-3 The History of Western Canada

HIST 204-3 The Social History of Canada

HIST 326-4 History of Aboriginal Peoples of North America since 1850

HIST 327-4 Canadian Labour and Working Class History

HIST 328-4 The Province of Quebec from Confederation

HIST 329-4 Canadian Family History

HIST 424-4 Problems in the Cultural History of Canada

HIST 425-4 Gender and History

HIST 428-4 Problems in the Social and Economic History of Canada

HIST 430-4 New France

HIST 431-4 Problems in the History of British North America 1760-1850

HIST 432-4 Problems in Environmental History

HIST 436-4 British Columbia

*Key courses for History: HIST 101, 102, 328; one of 201, 436; one of 424, 428; one of HIST 326, 327, 329***Department of Humanities**

HUM 323-4 The Humanities in Canada

**Latin American Studies Program**

LAS 320-3 Canada and Latin America

*Key course for Latin American Studies: LAS 320***Department of Political Science**

POL 151-3 The Administration of Justice

POL 221-3 Introduction to Canadian Government

POL 222-3 Introduction to Canadian Politics

POL 251-3 Introduction to Canadian Public Administration

POL 252-3 Local Democracy and Governance

POL 320-4 Canada and Latin America

POL 321-4 The Canadian Federal System

POL 322-4 Canadian Political Parties

POL 323-4 Provincial Government and Politics

POL 324-4 The Canadian Constitution

POL 327-4 Globalization and the Canadian State

POL 347-4 Introduction to Canadian Foreign Policy

POL 352-4 Local and Urban Governance in Canada

POL 353-4 Public Sector Management

POL 354-4 Comparative Metropolitan Governance

POL 355-4 Governing Instruments

POL 422-4 Canadian International Security Relations

POL 423-4 BC Government and Politics

POL 424-4 Quebec Government and Politics

POL 426-4 Canadian Political Behavior

POL 428-4 Selected Topics in Canadian Government and Politics I

POL 429-4 Selected Topics in Canadian Governance and Politics II

POL 451-4 Public Policy Analysis

POL 454-4 Urban Public Policy Making\*

POL 455-4 Issues in Economic and Social Policy\*

POL 458-4 Selected Topics in Local and Urban Government and Politics\*

POL 459-4 Selected Topics in Public Policy, Public Administration and Public Law\*

*Key courses for Political Science: POL 221, 222, 321, 324, 451***Department of Sociology and Anthropology**

SA 100-4 Perspectives on Canadian Society

SA 286-4 Aboriginal Peoples and British Columbia: Introduction

SA 300-4 Canadian Social Structure

SA 335-4 Gender Relations and Social Issues\*

SA 386-4 Native Peoples and Public Policy\*

SA 396-4 Selected Regional Areas\*

SA 400-4 Canadian Ethnic Minorities

SA 486-4 Aboriginal Peoples and British Columbia: Advanced Seminar

*Key courses for Anthropology: SA 100, 400, 486**Key courses for Sociology: SA 100, 300, 400**Key courses for Sociology and Anthropology: SA 100, 300, 400, 486***Department of Women's Studies**

WS 101-3 Introduction to Women's Issues in Canada

WS 201-3 Women in Canada 1600-1920

WS 202-3 Women in Canada 1920 to the Present

WS 301-4 Special Topics in Women's Studies\*

WS 302-4 Special Topics in Women's Studies\*

WS 303-4 Special Topics in Women's Studies\*

WS 307-3 Women and British Columbia

*Key courses for Women's Studies: WS 101, 201, 202, 307***Faculty of Business Administration**

BUEC 280-3 Introduction to Labor Economics

BUS 303-3 Business, Society and Ethics

BUS 344-3 Business to Business Marketing

BUEC 384-3 Industrial Relations

BUEC 391-3 Law in the Economic Society

BUS 393-3 Commercial Law

BUEC 396-3 The Structure of Industry

BUS 403-3 Seminar in Business and Society\*

BUS 449-3 Marketing and Society

BUEC 433-5 Forecasting in Business and Economics

BUEC 485-3 Collective Bargaining

BUS 490-3 Selected Topics in Business Administration

BUS 491-3 Selected Topics in Business Administration

BUS 492-3 Selected Topics in Business Administration

BUS 493-3 Selected Topics in Business Administration

BUS 494-3 Selected Topics in Business Administration

BUS 495-5 Selected Topics in Business Administration

BUS 498-3 Directed Studies

BUS 499-5 Directed Studies\*

*Key courses for Business Administration: BUS 303, BUEC 280, BUEC 396.**Key courses for Business Administration and Economics: BUS 303, ECON 353, BUEC 391; any three of ECON 381, 390; BUEC 384, 396, 485***Faculty of Science****Department of Biological Sciences**

BISC 310-3 The Natural History of British Columbia

**Certificate in French Canadian Studies**

This program serves full and part-time students, and those seeking academic enrichment who are attracted by Continuing Studies' evening courses. French Canadian background material requires basic French language competency.

**Requirements**

Students complete

FREN 230-3 Introduction to French-Canadian Literature

HIST 328-4 The Province of Quebec from Confederation

POL 424-4 Quebec Government and Politics

Students must also achieve competence in the French language by either

- completing six units from group B courses below, or equivalent transfer credit as confirmed by a Department of French placement test. (Students requiring a reading knowledge of French should complete FREN 198 and the former FREN 298. The others stress speaking and understanding French.)
- or by passing a placement exam at the grade 12 French level, administered by the department.

**List of Relevant Courses**

In addition, at least 27 units are required, chosen from the list of relevant courses below, of which no more than six units in group B may be counted.

**Relevant Courses****Group A French Canadian Studies**

CNS 160-3 The Social Background of Canada

CNS 210-3 The Foundations of Canadian Culture

CNS 280-3 Canadian Political Economy

CNS 390-3 Hockey in Canadian Popular Culture\*

CNS 391-3 Special Canadian Topics\*

CNS 490-5 The Canadian Intellectual Tradition\*

CNS 491-3 Technology and Canadian Society\*

FREN 230-3 Introduction to French-Canadian Literature  
 FREN 342-4 Literature in Transition from the World\*  
 FREN 422-3 Canadian French  
 FREN 430-3 The French-Canadian Novel and Theatre  
 HIST 101-3 Canada to Confederation  
 HIST 102-3 Canada Since Confederation  
 HIST 328-4 The Province of Quebec from Confederation  
 HIST 430-4 New France  
 POL 424-4 Quebec Government and Politics

#### Group B French Language

FREN 121-3 Introductory French I  
 FREN 122-3 Introductory French II  
 FREN 210-3 Intermediate French I  
 FREN 198-3 French for Reading Knowledge I  
 FREN 199-3 Writing French I: Spelling and Grammar  
 FREN 211-3 Intermediate French II  
 FREN 221-3 French Writing I  
 FREN 215-3 Intermediate French: Oral Practice  
 FREN 222-3 French Writing II  
 FREN 298-3 French for Reading Knowledge II  
 FREN 300-3 Advanced French – Oral Practice  
 FREN 301-3 Advanced French – Composition  
 FREN 304-3 Advanced French – Grammar

\*may be applied to the certificate program with approval of the Department of French; approval depends upon the extent of French Canadian content

## Cognitive Science Program

8115 Robert C. Brown Hall, 778.782.7127 Tel,  
 778.782.7128 Fax, [www.sfu.ca/cognitive-science](http://www.sfu.ca/cognitive-science),  
[info-cogsci@sfu.ca](mailto:info-cogsci@sfu.ca)

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#### Professor Emeritus

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#### Associate Members

J. Alderete, Department of Linguistics  
 J. Delgrande, School of Computing Science  
 S. DiPaola, School of Interactive Arts and Technology  
 B. Fisher, School of Interactive Arts and Technology  
 R. Hadley, School of Computing Science  
 C. Han, Department of Linguistics  
 P. Hanson, Department of Philosophy  
 N. Hedberg, Department of Linguistics  
 T. Leacock, Faculty of Education  
 C. MacKenzie, Department of Biomedical Physiology and Kinesiology  
 F. Popowich, School of Computing Science  
 M. Taboada, Department of Linguistics  
 P. Winne, Faculty of Education

#### Advisor

Ms. S. Senaratne BA (S Fraser), 8115 Robert C.  
 Brown Hall, 778.782.7127, [ssenarat@sfu.ca](mailto:ssenarat@sfu.ca)

The following programs are offered.

BA with a major in cognitive science  
 BA with a minor in cognitive science  
 honors in cognitive science: option A and option B

Research in cognition has surged recently, which affects fields such as psychology, linguistics, philosophy, computing science, education, anthropology, communications, and sociology. The greatest impact within psychology is in the sub-fields of psycholinguistics, cognitive psychology, and developmental psychology; within philosophy, on philosophy of language, philosophical logic, and

philosophy of mind; within linguistics, on semantics, syntax, phonology, and phonetics; and within computing science, on artificial intelligence.

Those working in these areas find they read the same literature and ask closely related questions in research and teaching. Increasingly, work in these fields belongs to a common area which cuts across traditional departmental organization. At Simon Fraser University, this interrelation is reflected in courses which draw on research, cognition and language from different departments. This program offers a structured and integrated study of cognition.

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 90.

### Breadth Requirements

Students must fulfil the Faculty of Arts and Social Sciences breadth requirements (see "Writing, Quantitative, and Breadth Requirements" on page 90).

### Languages Other Than English

Most graduate schools require some proficiency in one or two languages other than English. Those who contemplate graduate studies are advised to include language courses in their programs.

### Grade Point Average Requirement

The cognitive science grade point averages (GPA) (cognitive science GPA and cognitive science upper division GPA) are calculated on all the courses selected to satisfy the graduation requirements for a major, minor or honors. Only courses from each discipline that satisfy the requirements of the major or minor will be used to calculate the COGSGPA.

### Major Program

A Cognitive Science Program GPA (COGSGPA) of 2.0 or higher is required for program continuation.

### Lower Division Requirements Introductory Courses

(21-27 units)

Students complete  
 COGS 100-3 Exploring the Mind  
 plus the following requirements.

#### Computing Science

Students complete either  
 CMPT 126-3 Introduction to Computing Science and Programming  
 or both of  
 CMPT 120-3 Introduction to Computing Science and Programming I  
 CMPT 125-3 Introduction to Computing Science and Programming II

Additionally students who choose intermediate level computing science, must complete  
 MACM 101-3 Discrete Mathematics I

**Linguistics**  
 LING 220-3 Introduction to Linguistics

**Philosophy**  
 PHIL 100-3 Knowledge and Reality

**Psychology**  
 PSYC 100-3 Introduction to Psychology I  
 PSYC 102-3 Introduction to Psychology II

### Intermediate Courses

(18-25 units)

#### Cognitive Science

COGS 200-3 Foundations of Cognitive Science

Plus students must fulfil the requirements listed below for at least three of the four disciplines.

#### Computing Science

CMPT 225-3 Data Structures and Programming

#### Linguistics

LING 221-3 Introduction to Phonetics and Phonology  
 LING 222-3 Introduction to Syntax

#### Philosophy

PHIL 201-3 Epistemology  
 PHIL 210-4 Natural Deductive Logic

#### Psychology

PSYC 201-4 Introduction to Research Methods in Psychology  
 PSYC 221-3 Introduction to Cognitive Psychology  
 PSYC 280-3 Introduction to Biological Psychology

### Upper Division Requirements

(33-35 units)

Students complete both  
 COGS 300-3 Selected Topics in Cognitive Science  
 COGS 310-3 Consciousness

plus they must also fulfil the requirements listed below for the three disciplines selected previously at the intermediate level with an upper division cognitive science grade point average (COGSGPA) of 2.0 or higher in each of these three disciplines.

#### Computing Science

one of  
 CMPT 379-3 Principles of Compiler Design  
 CMPT 383-3 Comparative Programming Languages  
 CMPT 384-3 Symbolic Computing  
 MACM 300-3 Formal Languages and Automata with Applications

plus any two of  
 CMPT 310-3 Artificial Intelligence Survey  
 CMPT 411-3 Knowledge Representation  
 CMPT 412-3 Computational Vision (or CMPT 414)  
 CMPT 413-3 Computational Linguistics  
 CMPT 417-3 Intelligent Systems  
 CMPT 418-3 Computational Cognitive Architecture  
 CMPT 419-3 Topics in Artificial Intelligence

#### Linguistics

any three of  
 LING 321-3 Phonology  
 LING 322-3 Syntax  
 LING 323-3 Morphology  
 LING 324-3 Semantics  
 LING 330-3 Phonetics  
 LING 350-3 First Language Acquisition  
 LING 400-3 Formal Linguistics  
 LING 480-3 Topics in Linguistics I\*  
 LING 481-3 Topics in Linguistics II\*

\*relevant topics include discourse analysis, functional linguistics, language and the brain, computational linguistics

#### Philosophy

any three of  
 PHIL 302-3 Topics in Epistemology and Metaphysics  
 PHIL 314-3 Topics in Logic I  
 PHIL 341-3 Philosophy of Science  
 PHIL 343-3 Philosophy of Mind  
 PHIL 344-3 Philosophy of Language I  
 PHIL 444-4 Philosophy of Language II

#### Psychology

any three of  
 PSYC 303-3 Perception  
 PSYC 325-4 Memory and Mind  
 PSYC 330-3 Attention

PSYC 335-3 Sensation  
 PSYC 354-3 Development of Children's Thinking  
 PSYC 363-3 Psychopharmacology  
 PSYC 382-3 Cognitive Neuroscience  
 PSYC 385-3 Evolutionary Psychology

## Honors Program

A cognitive science grade point average (COGSGPA) of 3.0 or higher is required for entrance and continuation in this program. Those interested in the honors program should consult the co-ordinator of the cognitive science program.

Two options are available: option A and option B.

### Option A

A student must fulfil the requirements for a major in cognitive science and choose the courses listed below for one of the disciplines, and complete COGS 490-5 Honors Project I  
 COGS 491-5 Honors Project II

### Computing Science

Students complete one of the following courses which has not been completed previously  
 CMPT 379-3 Principles of Compiler Design  
 CMPT 383-3 Comparative Programming Languages  
 CMPT 384-3 Symbolic Computing  
 MACM 300-3 Formal Languages and Automata with Applications

plus any three of the following courses which have not been completed previously  
 CMPT 310-3 Artificial Intelligence Survey  
 CMPT 411-3 Knowledge Representation  
 CMPT 412-3 Computational Vision (or CMPT 414)  
 CMPT 413-3 Computational Linguistics  
 CMPT 417-3 Intelligent Systems  
 CMPT 418-3 Computational Cognitive Architecture  
 CMPT 419-3 Topics in Artificial Intelligence

### Linguistics

Students complete any four of the following courses which have not been completed previously  
 LING 400-3 Formal Linguistics  
 LING 401-3 Topics in Phonetics  
 LING 403-3 Topics in Phonology  
 LING 405-3 Topics in Syntax  
 LING 406-3 Topics in Semantics  
 LING 423-3 Topics in Morphology  
 LING 480-3 Topics in Linguistics I\*  
 LING 481-3 Topics in Linguistics II\*

\*relevant topics include Discourse Analysis, Functional Linguistics, Language and the Brain, Computational Linguistics

### Philosophy

Students complete any four of the following courses which have not been completed previously  
 PHIL 302-3 Topics in Epistemology and Metaphysics  
 PHIL 314-3 Topics in Logic I  
 PHIL 341-3 Philosophy of Science  
 PHIL 343-3 Philosophy of Mind  
 PHIL 344-3 Philosophy of Language I  
 PHIL 444-3 Philosophy of Language II

or any topics course approved by the cognitive science advisor.

### Psychology

Students complete any three of the following courses which have not been completed previously  
 PSYC 303-3 Perception  
 PSYC 330-3 Attention  
 PSYC 430-3 Selected Topics in Cognition I  
 PSYC 432-3 Selected Topics in Cognition II  
 PSYC 480-3 Selected Topics in Biological Psychology I  
 PSYC 482-3 Selected Topics in Biological Psychology II

### Option B

Students choose any course combination listed above totalling at least 11 units accepted by the cognitive science steering committee, and COGS 490 and 491.

## Minor Program

### Lower Division Requirements

(21-31 units)

Students complete both of  
 COGS 100-3 Exploring the Mind  
 COGS 200-3 Foundations in Cognitive Science

Students fulfil the requirements listed below for two of the four disciplines. When provided with a choice between different 200 division courses, students should consider which course can be used as a prerequisite for a subsequent 300 division course.

### Computing Science

Students complete one of  
 CMPT 125-3 Introduction to Computing Science and Programming II  
 CMPT 126-3 Introduction to Computing Science and Programming

and all of  
 CMPT 225-3 Data Structures and Programming  
 MACM 101-3 Discrete Mathematics I

### Linguistics

LING 220-3 Introduction to Linguistics  
 and one of  
 LING 221-3 Introduction to Phonetics and Phonology  
 LING 222-3 Introduction to Syntax

### Philosophy

PHIL 100W-3 Knowledge and Reality  
 PHIL 201-3 Epistemology  
 PHIL 210-3 Natural Deductive Logic

### Psychology

PSYC 100-3 Introduction to Psychology I  
 PSYC 102-3 Introduction to Psychology II  
 PSYC 201-4 Introduction to Research Methods in Psychology  
 PSYC 221-3 Introduction to Cognitive Psychology  
 PSYC 280-3 Introduction to Biological Psychology

### Upper Division Requirements

(15-16 units)

Students complete both of  
 COGS 300-3 Selected Topics in Cognitive Science  
 COGS 310-3 Consciousness

Students complete three courses from the following, including at least one course in each of the two disciplines selected previously at the lower division.

### Computing Science

CMPT 310-3 Artificial Intelligence Survey  
 CMPT 411-3 Knowledge Representation  
 CMPT 412-3 Computational Vision  
 CMPT 413-3 Computational Linguistics  
 CMPT 414-3 Model-based Computer Vision  
 CMPT 417-3 Intelligent Systems  
 CMPT 418-3 Computational Cognitive Architecture  
 CMPT 419-3 Special Topics in Artificial Intelligence

**Note:** 400 division courses require instructor consent

### Linguistics

LING 321-3 Phonology  
 LING 322-3 Syntax  
 LING 324-3 Semantics  
 LING 330-3 Phonetics  
 LING 350-3 First Language Acquisition

### Philosophy

PHIL 302-3 Topics in Epistemology and Metaphysics  
 PHIL 314-3 Topics in Logic I  
 PHIL 341-3 Philosophy of Science  
 PHIL 343-3 Philosophy of Mind  
 PHIL 344-3 Philosophy of Language I

### Psychology

PSYC 303-3 Perception  
 PSYC 325-4 Memory and Mind  
 PSYC 330-3 Attention  
 PSYC 335-3 Sensation  
 PSYC 382-3 Cognitive Neuroscience  
 PSYC 383-3 Psychopharmacology  
 PSYC 385-3 Evolutionary Psychology

## Co-operative Education

This program, for qualified students who wish cognitive science practical experience, entails planned study and employment terms. To be eligible, students must normally have completed 30 units including COGS 100 and four other COGS courses. At least 15 of these 30 must be completed at Simon Fraser University with a minimum CGPA of 2.75.

College transfer students must complete at least 15 units at Simon Fraser University for co-op admission and must satisfy the requirements given above, or their equivalents. College transfer students who participated in co-op programs elsewhere may be credited with the term(s) already completed. The applicability of such terms depends on the evaluation of the Cognitive Science Program.

The following are completed during four work terms.

COGS 370-0 Cognitive Science Practicum I  
 COGS 371-0 Cognitive Science Practicum II  
 COGS 470-0 Cognitive Science Practicum III  
 COGS 471-0 Cognitive Science Practicum IV

Arrangements for work terms are made through the Faculty of Arts and Social Sciences co-op co-ordinator at least two terms in advance.

To continue in the program, students must maintain a minimum 2.75 CGPA in the academic course work.

Contact the cognitive science co-ordinator for further information; see "Co-operative Education" on page 212.

## School of Criminology

10125 Arts and Social Sciences Complex 1,  
 778.782.3213 Tel, 778.782.4140 Fax,  
[www.sfu.ca/criminology](http://www.sfu.ca/criminology), [crimgo@sfu.ca](mailto:crimgo@sfu.ca)

### Director

R.M. Gordon BA (La Trobe), MA (S Fraser),  
 PhD (Br Col)

### Professors Emeriti

E.A. Fattah LLL (Cairo), MA, PhD (Montr), FRSCan  
 K. Faith BA, PhD (Calif)

### Professors

G.S. Anderson BSc (Manc), MPM, PhD (S Fraser),  
 Burnaby Mountain Endowed Professor  
 N.T. Boyd BA (WOnt), LLB, LLM (Law Soc Upper Canada)  
 P.J. Brantingham AB, JD (Col), RCMP Chair in Crime Analysis  
 P.L. Brantingham AB (Col), MA (Fordham), MSP,  
 PhD (Florida State), RCMP Chair in Computational Criminology  
 J. Brockman BA (Sask), MA (Alta), LLB (Calg),  
 LLM (Br Col)  
 B. Burtch BA (Qu), MA (Tor), PhD (Br Col)  
 R.R. Corrado BA (Mich), MA, PhD (Northwestern)  
 R.M. Gordon BA (La Trobe), MA (S Fraser),  
 PhD (Br Col)  
 C.T. Griffiths BA, MA, PhD (Montana)  
 M.A. Jackson BA (Calif), MA, PhD (Tor)  
 J. Lowman BA (Sheff), MA (York, Can), PhD (Br Col)  
 T.S. Palys BA, MA (Manit), PhD (Car)  
 S.N. Verdun-Jones BA, MA (Camb), LLM, JSD (Yale)

### Associate Professors

L.S. Bell BSc (Brad), MSc, PhD (Univ Coll, London)

E.O. Boyanowsky BA (WOnt), MS, PhD (Wis)  
W.G. Glackman BA (Calif), MA, PhD (S Fraser)  
J.A. Osborne LLB (Edin), MA (Tor), LLM (Br Col),  
Associate Vice-President, Academic

#### Assistant Professors

M.A. Andresen BA, MA (S Fraser), PhD (Br Col)  
E. Beauregard BSc, MSc, PhD (Montr)  
M. Bouchard BSc, MSc, PhD (Montr)  
G.J. Davies BA, MA (S Fraser), PhD (Rutgers)  
E. Elliott BPE (Ott), MSW (Car), PhD (S Fraser)  
B. Kinney BA (Br Col), MA, PhD (S Fraser)  
P. Lussier BSc, MSc, PhD (Montr)  
D. MacAlister JD (Br Col), BA, MA (S Fraser),  
LLM (Qu)  
B. Morrison BS (Calif, PhD (ANU)  
R. Parent BA, MA, PhD (S Fraser)  
J.S. Wong BA (Br Col), MA (Claremont), MPhil,  
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#### Lecturers

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S. Fabian BA (Br Col), MA (S Fraser)  
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#### Adjunct Professors

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D. Chappel BA, LLB (Tasmania), PhD (Camb)  
K. Davidson, Inspector OIC "E" Division, Behavioural  
Sciences Group, RCMP  
J. Faubert BA, MA (Guelph), PhD (S Fraser)  
D. Gustafson BA (Uvic), MA (Associated Mennonite  
Seminaries, Indiana)  
K. Heed BGS, MA (S Fraser)  
P. McCold BA (EWash), MA, PhD (NY State)  
P. McKnight LLB, MA (WOnt)  
P. Monture BA (WOnt), LLB (Qu), LLM (York, Can)  
K. Pranis BA, MA (Northwestern)  
C. Reasons BA (Central Wash), LLB (Br Col), MA  
(Ohio), PhD (Wash State)  
K. Rossmo BA (Sask), MA, PhD (S Fraser)  
S. Sharpe BA (N Dakota State), MA (N Colorado),  
PhD (Denver)  
B.D. Stuart BA (Bishop's), LLB (Qu), LLM (York, Can)

#### Associate Members

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S. Easton, Department of Economics  
J. Whatley, Continuing Studies

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Criminology offers courses leading to a bachelor of  
arts with a comprehensive, interdisciplinary approach.

The study of criminology attempts to unify all aspects  
of crime by an interdisciplinary and integrative  
approach. The curriculum assists students to acquire  
an in-depth understanding of the complexities of  
criminal, delinquent, and deviant behavior and of  
society's reaction to crime and deviance. Students  
concurrently acquire a theoretical and practical  
knowledge of the criminal justice system and its  
components, and gain insight into the philosophy,  
sociology, and present state of criminal law.

A wide range of disciplines including psychology,  
sociology and anthropology, political science,  
business administration, economics, philosophy,  
computing science, and mathematics are integrated  
with criminology courses into a curriculum which  
covers the following areas.

### Understanding Individuals, Society, the System and the Law

understanding the individual in society  
understanding human behavior  
understanding the criminal justice system  
understanding criminal behavior  
understanding the law  
understanding specific criminological problems

### Learning the Techniques

research methods and techniques  
techniques of intervention  
techniques of management, administration and  
planning  
relating theory to practice  
field work

This interdisciplinary program and the wide variety of  
criminology courses and other behavioral and social  
sciences integrated within it, allow students to pursue  
an interest in a different sector of applied criminology:  
crime prevention, corrections, criminal law reform and  
social reform.

## Enrolment Limitations

### Admission Requirements

The school limits upper division admission to its  
major, minor and honors programs. Entry is based on  
a formal application as soon as the lower division  
requirements are complete, for upper division  
admission effective the following term. Students are  
eligible to apply for entry to the major/honors program  
after successful completion of 60 units, including the  
lower division group A and B required courses.  
Students are eligible to apply for entry to the minor  
program after successful completion of 60 units  
including CRIM 101, 131 and 135. Students should  
make application to the school immediately after they  
have completed the above requirements.

### Continuation in Major, Honors or Minor

To continue in the major or minor programs, students  
must maintain a 2.25 CGPA. Students whose CGPA  
falls below 2.25 cannot enrol in any upper division  
CRIM courses including those offered through  
distance education. When it is restored to 2.25,  
students will be readmitted after review and approval  
of the director of undergraduate programs.

For honors continuance, a 3.00 CGPA must be  
maintained. Those with a lower CGPA cannot enrol in  
CRIM 499 and, therefore, cannot complete the  
program.

### Appeal Procedure

Applicants denied admission to a criminology  
major/honors/minor may appeal in writing to the  
school's director. If that appeal results in a negative  
decision, a written appeal to the dean of the Faculty of  
Arts and Social Sciences may be submitted. Appeals  
will be granted only in very exceptional  
circumstances.

### Enrolment Priority

Enrolment priority for limited enrolment upper division  
seminar courses in the school will be established on  
the basis of cumulative GPA.

### Transfer Students

Students transferring to Simon Fraser University from  
a two-year college that has articulated the first 60  
units of study in criminology with the School of  
Criminology will be considered on the basis of their  
college cumulative GPA (recalculated on the basis of  
grades received in courses transferable to the  
University), as well as other relevant materials.

## Writing, Quantitative, and Breadth Requirements

Degree program students must fulfil writing,  
quantitative and breadth requirements as part of their  
program. See "Writing, Quantitative, and Breadth  
Requirements" on page 7 for more information. For  
the faculty's requirements, see "Writing, Quantitative,  
and Breadth Requirements" on page 88.

## Major Program

Students in the general degree program must  
complete a total of 120 units (see "Major Program" on  
page 6 and the following requirements.)

Students majoring in criminology must obtain a  
minimum grade of C- in all required group A and  
group B courses.

### Lower Division Requirements

(normally the first 60 units)

Students complete 60 units including the  
requirements set out below under Group A, Group B  
and general electives.

- eight courses from group A
- seven courses from group B
- an additional five courses of general electives

The Faculty of Arts and Social Sciences breadth  
requirements must be completed for graduation and  
the general electives should be considered for that  
purpose.

Students may not complete group B requirements  
other than those listed below unless permission is  
obtained from the school's undergraduate curriculum  
committee prior to completing the course.

### Group A Lower Division Requirements

For admission to the major program, students who  
have completed PSYC 201 with a C- grade or better  
may request a waiver from CRIM 220 by petitioning  
the undergraduate advisor. Only in exceptional cases  
will this waiver be granted, and if approved, an  
additional three units of upper division criminology  
must be completed to replace CRIM 220.

Students are required to complete all of  
CRIM 101-3 Introduction to Criminology  
CRIM 103-3 Psychological Explanations of Criminal  
and Deviant Behavior  
CRIM 104-3 Sociological Explanations of Criminal  
and Deviant Behavior  
CRIM 131-3 Introduction to the Criminal Justice  
System — A Total System Approach  
CRIM 135-3 Introduction to Canadian Law and Legal  
Institutions: A Criminal Justice Perspective  
CRIM 220-3 Research Methods in Criminology  
CRIM 230-3 Criminal Law

plus one of  
CRIM 203-3 Historical Reaction to Crime and  
Deviance  
CRIM 210-3 Law, Youth and Young Offenders  
CRIM 213-3 Introduction to Women and Criminal  
Justice  
CRIM 231-3 Introduction to the Judicial Process  
CRIM 241-3 Introduction to Corrections  
CRIM 251-3 Introduction to Policing

### Group B Lower Division Requirements

Students are required to complete seven courses,  
including all of  
PSYC 100-3 Introduction to Psychology I  
PSYC 102-3 Introduction to Psychology II  
SA 150-4 Introduction to Sociology

plus one of  
POL 100-3 Introduction to Politics and Government  
POL 151-3 The Administration of Justice

plus one of  
PSYC 210-4 Data Analysis in Psychology

STAT 100-3 Chance and Data Analysis  
 STAT 101-3 Introduction to Statistics  
 STAT 203-3 Introduction to Statistics for Social Sciences\*

\*STAT 203 is recommended

plus one of

PHIL 001-3 Critical Thinking  
 PHIL 100-3 Knowledge and Reality  
 PHIL 110-3 Introduction to Logic and Reasoning  
 PHIL 120-3 Introduction to Moral Philosophy  
 PHIL 150-3 History of Philosophy I  
 PHIL 151-3 History of Philosophy II  
 PHIL 220-3 Introduction to Social and Political Philosophy  
 PHIL 244-3 Introduction to the Philosophy of Natural and Social Science  
 PHIL 280-3 Introduction to Existentialism

plus at least one lower division course chosen from the following disciplines.

archaeology (ARCH)  
 business administration (BUS)  
 Canadian studies (CNS)  
 communication (CMNS)  
 computing science (CMPT)  
 economics (ECON and BUEC)  
 education (EDUC)  
 English (ENGL)  
 geography (GEOG)  
 history (HIST)  
 mathematics (MATH)  
 philosophy (PHIL)  
 political science (POL)  
 psychology (PSYC)  
 sociology and anthropology (SA)  
 statistics (STAT)  
 women's studies (WS)

### General Electives Lower Division Requirements

Students are required to complete the balance of the first 60 units by choosing any other 100-200 division courses or the transfer equivalent thereof. Faculty of Arts and Social Sciences breadth requirements must be completed for graduation and general electives should be considered for that purpose.

**Note:** Declared criminology majors normally complete all lower division group A and B requirements before proceeding to upper division. Students may proceed to upper division courses without having completed these lower division courses only with the express written approval of the criminology undergraduate curriculum and articulation committee.

### Upper Division Requirement

Students complete a minimum of 48 units in courses as set out below. Of these 48, students are required to complete a minimum of 36 in criminology (excluding CRIM 301), which must include the following four courses.

CRIM 300-3 Current Theories and Perspectives in Criminology  
 CRIM 320-3 Quantitative Research Methods in Criminology  
 CRIM 321-3 Qualitative Research Methods in Criminology  
 CRIM 330-3 Criminal Procedure and Evidence

Please see "Criminology CRIM" on page 348 for the listing of upper division criminology courses.

An additional 12 required units may be chosen from criminology or other disciplines excluding CRIM 301.

**Note:** Many upper division courses have prerequisites or enrolment restrictions. If in doubt about eligibility to enrol in a non-criminology course, contact the advisor in the appropriate department *well in advance* of any attempt to enrol.

### Additional Electives

To satisfy degree requirements, the remaining units may be selected at the student's discretion. Faculty of Arts and Social Sciences breadth requirements must be completed for graduation so general electives should be considered for that purpose.

### Police Studies Concentration

Advisor

Mr. P. Jong, Arts and Social Sciences Complex 1, 778.782.3645, philjong@sfu.ca

This concentration is offered to those completing a major, honors, minor or post baccalaureate diploma in criminology. While the concentration is offered primarily at the Simon Fraser University Surrey campus, many will be taught at the main Burnaby campus, and through the Centre for On-Line and Distance Education. The concentration is aimed at students who wish to focus their criminology undergraduate studies on policing-related courses, and they are advised to complete the following.

CRIM 251-3 Introduction to Policing  
 CRIM 455-3 Advanced Issues in Policing

In addition, students are advised to complete a minimum of 18 upper division units (additional to CRIM 455), as well as any lower division prerequisites. Policing courses are divided into the following areas of specialty.

#### *Minorities and the Criminal Justice System*

CRIM 311-3 Minorities and the Criminal Justice System  
 CRIM 419-3 Aboriginal/Indigenous Justice  
 CRIM 429-3 Indigenous Peoples and International Law

#### *Forensic Studies*

CRIM 315-3 Restorative Justice  
 CRIM 355-3 The Forensic Sciences  
 CRIM 356-3 The Forensic Sciences II  
 CRIM 357-3 Forensic Anatomy  
 CRIM 451-3 Advanced Techniques in Forensic Science  
 CRIM 452-3 Skeletal Pathology and Criminalistics  
 CRIM 442-3 Restorative Justice Practice: Advanced Topics

#### *Crime Analysis and Crime Prevention*

CRIM 350-3 Techniques of Crime Prevention I  
 CRIM 352-3 Environmental Criminology: Theory and Practice  
 CRIM 433-3 Communities and Crime  
 CRIM 450-5 Techniques of Crime Prevention II

#### *Special Types of Offenders or Crimes*

CRIM 316-3 Sexual Offenders and Sexual Offences  
 CRIM 317-3 Prostitution in Canada  
 CRIM 454-3 Criminal Profiling

#### *Key Issues in Policing*

CRIM 310-3 Young Offenders and Criminal Justice: Advanced Topics  
 CRIM 314-3 Mental Disorder, Criminality and the Law  
 CRIM 410-3 Decision-making in Criminal Justice  
 CRIM 413-3 Terrorism  
 CRIM 453-3 Policing Illegal Drug Markets

and any other 300 or 400 division course that is designated as a police studies course (see the advisor for further information).

### Honors Program

The School of Criminology's structured honors program for outstanding undergraduate students dovetails with the criminology major and consists of two terms of advanced course work and supervised research. Honors students write and defend a short thesis. Students are admitted as a group each September, and must complete and defend their theses by the following April.

Students normally enter the program with a minimum of 110 units (see below) but may enter with less and complete one additional course in the first term with undergraduate program director permission. Students complete 132 units minimum with GPAs in accordance with general and Faculty of Arts and Social Sciences graduation requirements including a minimum 3.00 CGPA (3.50 for first class honors).

Students may also complete a police studies concentration (see "Police Studies Concentration" on page 101).

See "Honors Program" on page 6 and "Grade Point Averages Needed for Graduation" on page 31.

### Admission Requirements

Eligible students should apply to the undergraduate program director. The selection process normally happens each spring for September admission.

### Lower Division Requirements

Lower division requirements are the same as for the major in criminology.

### Upper Division Requirements

Students complete a minimum of 60 upper division units. Of these 60, 50 units minimum must be from upper division criminology courses and must include

CRIM 300W-3 Current Theories and Perspectives in Criminology  
 CRIM 320-3 Quantitative Research Methods in Criminology  
 CRIM 321-3 Qualitative Research Methods in Criminology  
 CRIM 330-3 Criminal Procedure and Evidence  
 CRIM 490-5 Honors Thesis I  
 CRIM 491-5 Current Theory and Research in Criminology: Advanced Topics  
 CRIM 499-12 Honors Thesis II

The remaining units, to satisfy degree requirements, may be selected at the student's discretion. Faculty of Arts and Social Sciences breadth requirements must be completed for graduation; general electives should be considered for that purpose.

For program continuation, students must maintain a 3.0 cumulative grade point average (CGPA). Those whose CGPA falls below 3.0 cannot enrol in CRIM 499 and therefore cannot complete the program.

### Criminology Minor Program

Students complete all of

CRIM 101-3 Introduction to Criminology  
 CRIM 131-3 Introduction to the Criminal Justice System — a Total System Approach  
 CRIM 135-3 Introduction to Canadian Law and Legal Institutions: A Criminal Justice Perspective

and at least 18 other units in criminology courses numbered 300 and above. A minimum C- grade in each of CRIM 100/101/102, 131 and 135 is also required.

Students may also complete a police studies concentration (see "Police Studies Concentration" on page 101).

### Legal Studies Minor Program

#### Lower Division Requirements

Students complete a minimum of nine lower division units including both

CRIM 135-3 Introduction to Canadian Law and Legal Institutions  
 POL 151-3 The Administration of Justice

and at least one of  
 CRIM 210-3 Law, Youth and Young Offenders

CRIM 230-3 Criminal Law  
 CRIM 231-3 Introduction to the Judicial Process  
 PHIL 120 is strongly recommended.

### Upper Division Requirements

Students complete one of  
 CRIM 332-3 Sociology of Law  
 CRIM 338-3 Philosophy of Law

Students must select additional courses totalling at least 15 units from the upper division courses listed from those listed below. Students must be careful to ensure they have necessary lower level prerequisites.

Note: Students who have completed both CRIM 332 and 338 need only complete 12 units from the list below. Criminology majors who wish to complete the this minor must complete six of the upper division units in a discipline outside of their major.

BUEC 391-3 Law in the Economic Society  
 BUEC 427-3 Industrial Organization: Law and Economics  
 BUS 393-3 Commercial Law  
 CRIM 310-3 Young Offenders and Criminal Justice: Advanced Topics  
 CRIM 314-3 Mental Disorder, Criminal Procedure and Evidence  
 CRIM 331-3 Advanced Criminal Law  
 CRIM 333-3 Women, Law and the State  
 CRIM 335-3 Human Rights and Civil Liberties  
 CRIM 336-3 Corporate Crime and Corporate Regulation  
 CRIM 416-3 Current Issues in Criminology and Criminal Justice\*  
 CRM 417-3 Current Issues in Criminology and Criminal Justice\*  
 CRIM 418-3 Current Issues in Criminology and Criminal Justice\*  
 CRIM 430-3 Judicial Administration and Planning  
 CRIM 432-3 Gender in the Courts and the Legal Profession  
 CRIM 435-3 Adult Guardianship Law (or GERO 435)  
 CRIM 436-3 Corporate Crime and Corporate Regulation: Advanced Topics  
 CRIM 437-3 Crime and Misconduct in the Professions  
 ECON 388-3 Introduction to Law and Economics  
 EDUC 445-4 Legal Context of Teaching  
 EDUC 446-4 Law for the Classroom Teacher  
 EDUC 448-4 Law in the Curriculum  
 HIST 312-4 Poverty, Crime and Madness, Society and the Outcast  
 PHIL 320-3 Social and Political Philosophy  
 PHIL 321-3 Moral Issues and Theories  
 POL 324-4 The Canadian Constitution  
 POL 344-4 Public International Law  
 POL 346-4 International Organizations  
 POL 351-4 The Public Policy Process  
 POL 355-4 Governing Instruments  
 POL 417-4 Human Rights Theories  
 POL 459-4 Selected Topics in Governance  
 PSYC 369-3 Law and Psychology  
 PSYC 469-4 Selected Topics in Psycholegal Issues  
 WS 303-4 Special Topics in Women's Studies\*\*

\*when offered as a legal topic

\*\*when offered as the topic Women and the Law

Check with the school for additional relevant courses.

Students may also complete a police studies concentration (see "Police Studies Concentration" on page 101).

### Extended Minor Program

This program consists of the lower division requirements for a major and the upper division requirements for a minor. Certain other criteria may be set by individual departments and programs. A student must have their program approved by the advisor for the extended minor program.

## Criminology and Canadian Studies Joint Major Program

A joint major with the School of Criminology and the Centre for Canadian Studies is available. Students complete all requirements for a criminology major and a Canadian studies major. Any lower division course that counts toward the separate requirements for Canadian studies and for criminology may be counted towards both. Up to 12 upper division units in both Canadian studies and criminology may be counted toward the upper division unit requirements of both. A joint major in Canadian studies and criminology that also specifies 30 upper division units will therefore require a total of 48 upper division units in the two subjects (30 Canadian studies plus 30 criminology minus 12 overlap). Joint majors are required to complete all the key courses listed for the department in which they are pursuing the other major.

## Criminology and Psychology Joint Major Program

### Program Requirements

This program explores relationships between the study of criminology and psychology. Students should consult advisors in both departments.

Students must satisfy the admission requirements for both criminology and psychology major programs and have School of Criminology approval before being approved by the Department of Psychology. To continue in the joint major, students must maintain a 2.25 CGPA and cannot enrol in upper division criminology courses with a CGPA of less than 2.25. However, a student whose CGPA is between 2.00 and 2.25 may be eligible for a major in psychology.

Students who complete CRIM 220 must obtain a Department of Psychology waiver of the PSYC 201 prerequisite for PSYC 210 and all 300/400 division PSYC courses, in advance of attempting to enrol for any of these courses. Students who complete PSYC 201 must obtain from the criminology advisor a waiver of the CRIM 220 prerequisite for CRIM 320, in advance of attempting to enrol for this course.

### Criminology Requirements

#### Group A Lower Division Requirements

all of

CRIM 101-3 Introduction to Criminology  
 CRIM 103-3 Psychological Explanations of Criminal and Deviant Behavior  
 CRIM 104-3 Sociological Explanations of Criminal and Deviant Behavior

plus all of

CRIM 131-3 Introduction to the Criminal Justice System — A Total System Approach  
 CRIM 135-3 Introduction to Canadian Law and Legal Institutions: A Criminal Justice Perspective  
 CRIM 230-3 Criminal Law

plus one of

CRIM 203-3 Historical Reaction to Crime and Deviance  
 CRIM 210-3 Law, Youth, and Young Offenders  
 CRIM 213-3 Introduction to Women and Criminal Justice  
 CRIM 231-3 Introduction to the Judicial Process  
 CRIM 241-3 Introduction to Corrections  
 CRIM 251-3 Introduction to Policing

#### Group B Lower Division Requirements

SA 150-4 Introduction to Sociology

plus one of

POL 100-3 Introduction to Politics and Government  
 POL 151-3 The Administration of Justice

plus one of

PHIL 001-3 Critical Thinking

PHIL 100-3 Knowledge and Reality  
 PHIL 110-3 Introduction to Logic and Reasoning  
 PHIL 120-3 Introduction to Moral Philosophy  
 PHIL 150-3 History of Philosophy I  
 PHIL 151-3 History of Philosophy II  
 PHIL 220-3 Introduction to Social and Political Philosophy  
 PHIL 244-3 Introduction to the Philosophy of Natural and Social Science  
 PHIL 280-3 Introduction to Existentialism

### Upper Division Requirements

all of

CRIM 300-3 Current Theories and Perspectives in Criminology  
 CRIM 320-3 Quantitative Research Methods in Criminology  
 CRIM 330-3 Criminal Procedure and Evidence

plus a minimum of 12 units of upper division criminology group A courses (excluding CRIM 369 and 462) and six units of upper division non-criminology (group B) courses *other than* psychology.

### Psychology Requirements

#### Lower Division Requirements

all of

PSYC 100-3 Introduction to Psychology I\*  
 PSYC 102-3 Introduction to Psychology II\*  
 PSYC 207-3 Introduction to the History of Psychology\*  
 PSYC 210-4 Introduction to Data Analysis in Psychology\*

plus one of

CRIM 220-3 Research Methods in Criminology\*  
 PSYC 201-4 Introduction to Research Methods in Psychology\*

\*students must obtain a final course grade of C (2.0) or better in **each** of these courses.

plus one group A course

PSYC 221-3 Introduction to Cognitive Psychology  
 PSYC 280-3 Introduction to Biological Psychology

plus one group B course

PSYC 241-3 Introduction to Abnormal Psychology  
 PSYC 250-3 Introduction to Developmental Psychology  
 PSYC 260-3 Introduction to Social Psychology  
 PSYC 268-3 Introduction to Law and Psychology  
 PSYC 270-3 Introduction to Theories of Personality

### Upper Division Requirements

Students complete 21 units in upper division psychology courses. No more than three of these units may be in directed studies. At least 11 upper division psychology units must be completed at Simon Fraser University.

## Sociology or Anthropology and Criminology Joint Major Program

See "Sociology or Anthropology and Criminology Joint Major Program" on page 135.

## Women's Studies and Criminology Joint Major Program

See "Criminology and Women's Studies Joint Major Program" on page 140 for requirements.

## Certificate Programs

Advisor

Mr. P. Jong, 10125 Arts and Social Sciences  
 Complex 1, 778.782.3645

Two criminology certificate program are offered: general certificate in criminology; advanced certificate in criminology. Both are primarily directed toward

undergraduates and criminal justice professionals, but are open to all. Those who hold a bachelor's degree (in any field of study) should refer to the post baccalaureate diploma in criminology.

The certificates are not designed to satisfy specific employment credentials. Rather, the general certificate provides a basic theoretical and descriptive criminology foundation; the advanced certificate provides in-depth understanding with intensive study.

These certificate program courses are offered through the Centre for Distance Education to assist students in understanding the complexities of illegal behaviors, as well as society's reactions.

### Admission Requirements

Applicants must meet undergraduate admission deadlines as shown in this Calendar. Application forms and official documents must be submitted to Student Services. In addition to applying for University admission, students apply in writing to the school's advisor for certificate program admission.

## General Certificate

### Program Requirements

- successful completion of 60 units, including the required courses as listed below
- a minimum grade of C- in each of the courses required for the certificate
- the majority of criminology courses must be completed through the Centre for Distance Education
- completion of the certificate within five years of admission to the program

### Required Courses

CRIM 101-3 Introduction to Criminology  
CRIM 103-3 Psychological Explanations of Criminal and Deviant Behavior  
CRIM 104-3 Sociological Explanations of Criminal and Deviant Behavior

plus all of

CRIM 131-3 Introduction to the Criminal Justice System – A Total System Approach  
CRIM 135-3 Introduction to Canadian Law and Legal Institutions: A Criminal Justice Perspective  
CRIM 220-3 Research Methods in Criminology  
CRIM 230-3 Criminal Law  
PHIL 110-3 Introduction to Logic and Reasoning  
POL 151-3 The Administration of Justice  
PSYC 100-3 Introduction to Psychology I  
PSYC 102-3 Introduction to Psychology II  
SA 150-4 Introduction to Sociology  
STAT 101-3 Introduction to Statistics

The remaining units must be selected from specific groups of optional courses as follows.

- one course must be chosen from group A
- two courses must be chosen from group B
- the balance may be satisfied with courses chosen from groups A, B or C

### Optional Courses

#### Group A

Students may choose from any of the remaining 100 and 200 division distance education courses, such as

CRIM 213-3 Introduction to Women and Criminal Justice  
CRIM 241-3 Introduction to Corrections  
CRIM 251-3 Introduction to Policing

#### Group B

Any 100 and 200 division distance education courses from the group B disciplines may be chosen, such as archaeology (ARCH)  
business administration (BUS)  
Canadian studies (CNS)  
communication (CMNS)

computing science (CMPT)  
economics (ECON and BUEC)  
education (EDUC)  
English (ENGL)  
geography (GEOG)  
history (HIST)  
mathematics (MATH)  
philosophy (PHIL)  
political science (POL)  
psychology (PSYC)  
sociology and anthropology (SA)  
statistics (STAT)  
women's studies (WS)

### Group C

Any lower division courses offered at Simon Fraser University or which transfer from another post-secondary institution (including the Open Learning Agency) to the equivalent of 100-200 division Simon Fraser University courses.

**Note:** Students enrolled at Simon Fraser University must obtain prior permission of Student Services by completing the letter of permission form.

## Advanced Certificate

### Program Requirements

- completion of Simon Fraser University's general criminology certificate, or two years (equivalent to 60 Simon Fraser University units) of accredited course work at a university or community college, or completion of a criminology certificate or diploma from a BC regional college prior to entering the advanced certificate program

**Note:** Students without a criminology certificate or diploma must complete CRIM 101, 131 and 135, and obtain at least C- in each.

- successful completion of 18 units from criminology courses numbered 300/400 (refer to the group A courses in the criminology major program section)
- the majority of courses must be completed through distance education (consult the Centre for Distance Education for a list of criminology distance education courses)
- completion of the certificate within five years of admission to the program

## Post Baccalaureate Diploma Programs

### Advisor

Mr. P. Jong, 10125 Arts and Social Sciences Complex 1, 778.782.3645

This program is for students who hold a bachelor's degree in a discipline other than criminology to expand their knowledge of criminology through a recognized program. Students pursue individual interests in specific criminology areas. The program is available through distance education, at the Burnaby and Vancouver campuses.

For information about post baccalaureate diploma program general regulations, see "Post Baccalaureate Diploma Program" on page 7.

## Post Baccalaureate Diploma in Criminology

### Program Requirements

- completion of lower division prerequisite courses CRIM 101, 131 and 135
- successful completion of an approved program comprised of 30 units of third and fourth year courses
- of the 30 units, a minimum of 15 must come from criminology courses numbered 300/400 and the

remaining from any upper division on campus or distance education courses, or a combination of both

- minimum 2.5 GPA on courses applied toward the diploma
- completion of the diploma within five years of admission to the program

For information, contact the advisor in criminology.

### Application Deadlines

Written application for program admission must be received by the advisor no later than

February 1 (summer term admission)  
April 30 (fall term admission)  
September 30 (spring term admission)

Students must make separate application for admission to the University, in accordance with University deadlines for the appropriate term.

Applications received by the school after the deadline will be considered only if resources permit following consideration of those applications received on time.

## Post Baccalaureate Diploma in Legal Studies

### Program Requirements

Students complete 30 approved upper division units, ensuring that they have the necessary lower division prerequisites for all courses in which they enrol.

Students complete both of  
CRIM 332-3 Sociology of Law  
CRIM 338-3 Philosophy of Law

In addition, students select one of the following concentrations and complete all of the courses listed.

#### *Criminal Law*

CRIM 310-3 Young Offenders and Criminal Justice:  
Advanced Topics  
CRIM 314-3 Mental Disorder, Criminality and the Law  
CRIM 330-3 Criminal Procedure and Evidence  
CRIM 331-3 Advanced Criminal Law  
CRIM 335-3 Human Rights and Civil Liberties

#### *Women and Law*

CRIM 333-3 Women, Law and the State  
CRIM 335-3 Human Rights and Civil Liberties  
CRIM 432-3 Gender in the Courts and the Legal Profession  
WS 303-4 Special Topics in Women's Studies\*

\*when offered as the topic Women and the Law

#### *Psychology and the Law*

PSYC 369-3 Law and Psychology  
PSYC 469-4 Selected Topics in Psycholegal Issues  
CRIM 314-3 Mental Disorder, Criminality and the Law  
CRIM 435-3 Adult Guardianship Law

#### *Education and Law*

EDUC 445-4 Legal Context of Teaching  
EDUC 446-4 Law for the Classroom Teacher  
EDUC 448-4 Law in the Curriculum

#### *Business, Economics and the Law*

BUEC 391-3 Law in the Economic Society  
BUEC 427-3 Industrial Organization: Law and Economics  
BUS 393-3 Commercial Law  
ECON 388-3 Introduction to Law and Economics

#### *Fundamental Rights and Law*

CRIM 335-3 Human Rights and Civil Liberties  
PHIL 320-3 Social and Political Philosophy (or 321)  
POL 324-4 Canadian Constitution  
POL 417-4 Human Rights Theories

To total 30 units, students choose additional courses from the Legal Studies Minor Program electives list (see "Legal Studies Minor Program" on page 101). Exemptions and replacements for required courses

may be granted by the criminology associate director who is responsible for undergraduate programs.

Students may also complete a police studies concentration (see page 101).

## Co-operative Education

### Program Requirements

This program, offered to qualified students who want practical criminology experience, entails planned terms of study and employment in the area of the student's choice. To be admitted, students must have completed 30 units, including all of

CRIM 101-3 Introduction to Criminology  
 CRIM 103-3 Psychological Explanations of Criminal and Deviant Behavior  
 CRIM 104-3 Sociological Explanations of Criminal and Deviant Behavior  
 CRIM 131-3 Introduction to the Criminal Justice System — A Total System Approach  
 CRIM 135-3 Introduction to Canadian Law and Legal Institutions: A Criminal Justice Perspective  
 CRIM 220-3 Research Methods in Criminology

plus one of

PSYC 210-4 Data Analysis in Psychology  
 STAT 100-3 Chance and Data Analysis  
 STAT 101-3 Introduction to Statistics  
 STAT 203-3 Introduction to Statistics for the Social Sciences

and have a 2.75 minimum CGPA. Transfer students must have completed at least 15 units at Simon Fraser University.

See "Co-operative Education" on page 212. Work term arrangements are made through the Faculty of Arts and Social Sciences co-op co-ordinator, who should be consulted at least one term in advance.

## Department of Economics

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### Associate Chair

G.M. Myers BA (Qu), MA, PhD (McM)

### Professors Emeriti

L.A. Boland BS (Bradley), MS, PhD (Ill), FRSC  
 J.F. Chant BA (Br Col), PhD (Duke)  
 P. Copes BA, MA (Br Col), PhD (LSE), DMilSc (Royal Roads), DrPhilos (Tromsø), FANSRF  
 J.W. Dean BSc (Car), MA, PhD (Harv)  
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### Professors

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### Assistant Professors

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\*joint appointment with business administration

The Department of Economics offers honors and major programs leading to the BA degree, and joint honors and joint major programs in co-operation with the Faculty of Business Administration and the Departments of Political Science, Geography (environmental specialty) and Latin American Studies. A minor program is offered for students who are majoring or completing honors programs in disciplines other than economics.

## Admission Requirements

Major, honors and minor program admission (including joint honors and joint majors) is limited. Entry is via a formal department application. Students may apply for admission once ECON 103, 105 and MATH 157 are completed with at least a C- grade in each course and the minimum CGPA is met.

On recommendation of the department and the Dean of Arts and Social Sciences office, the University establishes a yearly quota to admit students to major, honors, and minor programs, based on projected course space and department resources. The department announces the minimum CGPA below which students will not normally be considered.

Applications with appropriate documentation should be filed with the departmental advisor. Those whose applications are not approved may appeal to the department's undergraduate program chair. Students not accepted upon initial application may reapply.

## Non-Majors Access to Courses

### Lower Division

Access to lower division ECON and BUEC courses is available to all students meeting the prerequisites.

### Upper Division ECON Courses

Non-majors who meet the current CGPA entrance requirements have the same access as approved economics students to upper division ECON courses.

### Upper Division BUEC courses

Non-majors who meet the current CGPA entrance requirements have the same access as approved students in Economics and Business programs to upper division BUEC courses.

### Transfer Students

Students transferring to Simon Fraser University will be considered on the basis of their entrance CGPA (calculated for grades received in courses transferable to the University). Transfer students must be admitted to the University before applying for admission to the department's major, honors or minor programs. Students who meet these requirements will be admitted provisionally to the program and will retain the provisional status until 15 units have been completed at the University. To continue, the CGPA for these 15 must equal or exceed the CGPA entrance requirement for non-transfer students.

### Exchange and Visiting Students

Exchange and visiting students must obtain approval from the Department of Economics prior to enrolling in upper division ECON/BUEC courses.

## Course Information

For a course to fulfil a prerequisite, or for a required course to be accepted in a student's Economics program, a grade of C- or higher must be obtained.

BUEC courses are offered jointly by the Faculty of Business Administration and the Department of Economics. They may count for credit in either Business Administration or Economics programs, but not for both. A student may not receive credit for both BUEC courses and (former) ECON/COMM courses which have the same number.

Prerequisites may be waived for individuals by the department. In order for a course to be accepted as fulfilling a prerequisite, or for a required course to be accepted in a student's program in Economics (i.e. major, joint major, honors, joint honors or minor), a student must have obtained a grade of C- or higher.

## Requirements for the BA Degree

All major and honors students must meet BA degree requirements for either the honors or general program as described in the *Faculty of Arts and Social Sciences* section. Students should fulfil Faculty requirements early in their programs and obtain broadly based backgrounds before entering upper division courses. Major and honors must complete lower division requirements in the first 60 units prior to program acceptance (including joint programs).

For a course to fulfil a prerequisite, or for a required course to be accepted in an economics program (i.e., major, joint major, honors, joint honors, minor) students must have a grade of C- or higher.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.



## Major Program

### Lower Division Requirements

Students complete the following with at least a C- in each course prior to admission to the major program.

ECON 103-4 Principles of Microeconomics  
ECON 105-4 Principles of Macroeconomics  
MATH 157-3 Calculus for the Social Sciences I (or equivalent)

To meet the requirements for the major program, students must also complete

BUEC 232-4 Data and Decisions I

Two 200 division ECON or BUEC courses (in addition to BUEC 232)

Students who earn at least an A- in both ECON 103 and 105 are exempt from the requirement of two 200 division ECON or BUEC courses. These students should see *Early Access to Upper Division Courses* below for additional program information.

### Upper Division Requirements

Normally, majors will include 45 units of upper division credit in their last 60 units of work toward the degree.

At least 30 units of upper division credit in economics is required, including

BUEC 333-4 Statistical Analysis of Economic Data  
ECON 301-4 Microeconomic Theory I: Competitive Behavior  
ECON 302-4 Microeconomic Theory II: Strategic Behavior  
ECON 305-5 Intermediate Macroeconomic Theory

and at least one 400 division ECON or BUEC course (excluding ECON 402, 403, 431 and 435, BUEC 433 and 485).

### Early Access to Upper Division Courses

Students normally cannot enter ECON upper division courses during the first 60 units, but for those who have the minimum Simon Fraser University grade point average required to access upper division ECON/BUEC courses, the following exceptions are permitted.

Students who earn a grade of A- or better at Simon Fraser University on their first attempt in ECON 103 and 105 may enrol for ECON 301 and 305, and all courses for which they have satisfied the prerequisites, once 30 units is completed.

Students who earn an A- grade or better at Simon Fraser University on their first attempt in BUEC 232 or STAT 270 may enrol for BUEC 333 once they have completed 30 units. These upper division courses will count towards Department of Economics and Simon Fraser University upper division requirements. See individual course descriptions for access information.

### Advanced Upper Division Courses

Access to ECON 402, 403, 435 and 499 is restricted to students who have excelled in their studies (see "Economics ECON" on page 357 for individual course description details). These advanced courses are recommended for students wishing to pursue more challenging work or who plan an additional degree.

### Group Requirements

To meet the requirements for the major program, students must include at least one of the following, with a grade of C- or higher.

ECON 102-3 The World Economy  
ECON 104-3 Economics and Government  
ECON 110-3 Foundations of Economic Ideas  
ECON 208-3 History of Economic Thought  
ECON 250-3 Economic Development in the Pre-industrial Period  
ECON 309-5 Introduction to Marxian Economics

ECON 353-4 Economic History of Canada  
ECON 354-3 Comparative Economic Institutions  
ECON 355-4 Economic Development  
ECON 404-3 Methodology of the Social Sciences  
ECON 409-3 Seminar in Economic Thought  
ECON 450-3 Seminar in Quantitative Economic History  
ECON 451-3 Seminar in European Economic History  
ECON 452-3 Seminar in Economic Prehistory  
ECON 453-3 Seminar in the Economics of Education  
ECON 455-3 Seminar in Economic Development  
ECON 490-3 Seminar in Public Choice

## Honors Program

In addition to the required lower division courses for the economics major, students must receive credit for at least 50 upper division units in economics including the following.

BUEC 333-4 Statistical Analysis of Economic Data  
ECON 301-4 Microeconomic Theory I: Competitive Behavior  
ECON 302-4 Microeconomic Theory II: Strategic Behavior  
ECON 305-5 Intermediate Macroeconomic Theory  
ECON 331-5 Introduction to Mathematical Economics\*  
ECON 402-3 Advanced Microeconomic Theory  
ECON 499-6 Honors Seminar in Economics

and at least two of the following.

ECON 402-3 Advanced Microeconomic Theory  
ECON 403-3 Advanced Macroeconomic Theory  
ECON 435-5 Econometric Methods

plus two 400 division ECON courses (excluding ECON 402, 403, 431, 435, BUEC 433 and 485)

\*honors students who have successfully completed both MATH 232 and 251 need not complete ECON 331. However, at least 50 upper division units in economics must still be completed.

### Group Requirements

Students must also include at least one course from the economics group requirement (see "Group Requirements" on page 106) and are responsible for fulfilling all requirements for an honors degree set up by the Faculty of Arts and Social Sciences.

## Minor Program

### Lower Division Requirements

A minimum C- grade in all of the required courses listed below is required.

ECON 103-4 Principles of Microeconomics  
ECON 105-4 Principles of Macroeconomics

two 200 division ECON or BUEC courses (excluding BUEC 232)

### Upper Division Requirements

At least 15 upper division units in economics or BUEC courses, completed following the completion of 60 units are required. A maximum of eight ECON upper division units from another institution can be applied to the minor in economics.

## Extended Minor

### Lower Division Requirements

Students complete the same lower division requirements as a major with a minimum C- grade in each course.

### Upper Division Requirements

Students complete least 15 upper division ECON or BUEC units following the completion of 60 lower division units.

## Business Administration and Economics Joint Major Program

### Lower Division Requirements

Requirements are the same as for the economics major and business administration major.

### Upper Division Requirements

Students complete at least 29 upper division business administration or BUEC units including the core courses with the following exception:

- BUS 207 and 303 are waived
- BUEC 333, which must be completed, will count as upper division economics units rather than upper division business administration units
- three courses beyond the core must be completed within the requirements of a single concentration
- at least **two** 400 division BUS or BUEC courses excluding practicum courses and BUS 478. These courses may be within the area of concentration.

Students also complete at least 25 units of upper division credit in BUEC\*\* or economics including BUEC 333-4 Statistical Analysis of Economic Data  
ECON 301-4 Microeconomic Theory I: Competitive Behavior

ECON 302-4 Microeconomic Theory II: Strategic Behavior

ECON 305-5 Intermediate Macroeconomic Theory

and at least one 400 division ECON or BUEC course (excluding ECON 431, 435, BUEC 433 and 485)

\*\*BUEC courses may count only once as business administration or economics credit.

### Group Requirements

Students must include at least one course from the economics groups requirements. For information, see "Group Requirements" on page 105.

## Economics and Political Science Joint Major Program

For requirements, see "Political Science and Economics Joint Major Program" on page 130.

## Geography and Economics – Environmental Specialty Joint Major Program

For requirements, see "Geography and Economics – Environmental Specialty BA Joint Major Program" on page 175.

## Latin American Studies and Economics Joint Major Program

See "Joint Major Programs" on page 122.

## Business Administration and Economics Joint Honors Program

### Lower Division Requirements

Students must satisfy the lower division requirements for a joint major in business administration and economics.

### Upper Division Requirements

Students complete at least 35 upper division business administration units including the core courses with the exception of BUEC 333, which is counted as economics upper division units rather than business administration upper division units. See "Core Courses" on page 145.

As well, students complete an area of concentration and at least **three** 400 division business administration courses\* (excluding practicum courses and BUS 478) plus at least 30 units of upper division credit in economics or BUEC including all of

BUEC 333-4 Statistical Analysis of Economic Data  
ECON 301-4 Microeconomic Theory I: Competitive Behavior  
ECON 302-4 Microeconomic Theory II: Strategic Behavior  
ECON 305-5 Intermediate Macroeconomic Theory  
ECON 331-5 Introduction to Mathematical Economics\*\*

and one of  
ECON 402-3 Advanced Topics in Microeconomics  
ECON 403-3 Advanced Topics in Macroeconomics

and one of  
ECON 435-5 Quantitative Methods in Economics  
ECON 499-6 Honors Seminar in Economics

\*these courses may be within the areas of concentration

\*\*joint honors students who have successfully completed both MATH 323 and 251 need not complete ECON 331. However, at least 30 upper division units in economics must still be completed.

### Group Requirements

Students must include at least one course from the economics group requirements. For details, see Group Requirements.

### Grade Point Averages

For information about required grade point averages for the BA credential, See "Graduation GPA Requirements" on page 89.

### Post Baccalaureate Diploma

This program is for students who hold a bachelor's degree in a discipline other than economics. Students pursue individual interests in specific economics areas. For information, please see "Post Baccalaureate Diploma Program" on page 7.

### Co-operative Education

This program, for qualified students who wish to acquire practical experience in economics, entails planned terms of study and employment in the student's choice of area. For admission, students must have completed 30 units including ECON 103 (or 200) and ECON 105 (or 205). At least 12 of these 30 must be completed at Simon Fraser University with a minimum 2.75 CGPA. Arrangements for work terms are made through the Faculty of Arts and Social Sciences co-op co-ordinator at least one term in advance. See page 212 for details.

## Department of English

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778.782.5737 Fax, [www.sfu.ca/english](http://www.sfu.ca/english)

#### Chair

C. Gerson BA (S Fraser), MA (Dal), PhD (Br Col), FRSCan

#### Professors Emeriti

S.A. Black BA, MA (Calif State), PhD (Wash)  
R.F. Blaser BA, MA, MLS (Calif)  
G. Bowering BA, MA (Br Col)  
J.R. Curtis BA (Yale), MA (Mich), PhD (Cornell)  
P. Delany BCom (McG), AM (Stan), MA, PhD (Calif), FRSL, FRSCan  
S. Delany BA (Wellesley), MA (Calif), PhD (Col)  
S. Djwa BEd, PhD (Br Col), FRSCan  
E.F. Harden AB (Prin), AM, PhD (Harv)

R.N. Maud AB, PhD (Harv)  
R.A. Miki BA (Manit), MA (S Fraser), PhD (Br Col)  
J. Mills BA (Br Col), MA (Stan), MTS (Br Col)  
M. Page MA (Camb), DPSA (Oxf), MA (McM), PhD (Calif)  
A. Rudrum BA (Lond), PhD (Nott)  
D. Stouck BA (McM), MA (Tor)  
J. Zaslove BA (Case W Reserve), PhD (Wash)\*

#### Professors

R.M. Coe BA (CUNY), MA (Utah), PhD (Calif)  
L. Davis BA (Sask), MA, PhD (Calif)  
C. Gerson BA (S Fraser), MA (Dal), PhD (Br Col), FRSCan  
M.A. Gillies BA (Alta), MPhil, DPhil (Oxf)  
E.A. Schellenberg BEd, BA (Winn), MA, PhD (Ott)

#### Associate Professors

P. Budra BA, MA, PhD (Tor)  
C. Burnham BA, MA (Vic, BC), PhD (York)  
C. Colligan BA (Vict, BC), MA, PhD (Qu)  
S. Collis BA (Vic, BC), PhD (S Fraser)  
J. Derksen BA (Vic, BC), MA, PhD (Calg)  
P. Dickinson BA (Tor), MA, PhD (Br Col)  
J. Fleming BA (Br Col), MA (Tor), MA, MPhil, PhD (Col)  
T. Grieve BA, MA (S Fraser), PhD (Johns H)  
A. Higgins BA (Conn), MA (McG), MA (Mass), MA, MPhil, PhD (Yale)  
C. Lesjak BA (Swarthmore), MA, PhD (Duke)  
M. Levy BA, MA (Tor), PhD (Calif)  
J. Smith BA (Yale), MEd, MA, PhD (Virginia)  
P.M. St. Pierre BA (Br Col), MA (Qu), PhD (Syd)

#### Assistant Professors

R. Arab BA, MA (Dal), PhD (Col)  
S. Brook BA (Otago), PhD (Duke)  
D. Chariandy BA, MA (Car), PhD (York, Can)  
D. Coley BA (ConnColl), MA (Penn), PhD (Maryland)  
P. Cramer MPhil (Miami), MA, PhD (Carnegie-Melon)  
M. Everton BA (J Madison), MA (Tenn), PhD (N Carolina)  
M. Hussey BA (Calif), MA (Wales), PhD (Wis)  
C. Kim BA, MA, PhD (York)  
M. Linley BA (WLaur), MA, PhD (Qu)  
S. McCall BA (Qu), MA (Br Col), PhD (York)  
D.H. Reeder BA (C'dia), MA (York, Can), PhD (Br Col)\*  
D. Solomon BA (Vassar), MA (Hawaii), PhD (Cali)  
T. Werth BA (Port), MA, PhD (Col)  
S. Zwagerman BA (Calif), MA (Sonoma), PhD (S Calif)

#### Senior Lecturers

N. Didicher BA (Guelph), MA, PhD (Qu)  
M. Valiquette BA, MA (S Fraser)  
M. Sawatsky BA, MA (S Fraser)

\*joint appointment with First Nations studies

#### Lecturer

A. Hungerford BA, MA (S Fraser)

#### Advisors

Ms. K. Ward BA (S Fraser), 6133 Academic Quadrangle, 778.782.4835

Ms. M. Curtin BA (McG), 6137 Academic Quadrangle, 778.782.3371

The associate chair and other faculty are available for Department of English advice. Enquire at the departmental office. Students planning to enter the honors program are particularly encouraged to consult with departmental advisors. Course outlines vary each term. Check at the general office.

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

## Major Program

### Lower Division Requirements

Students complete two of  
ENGL 101W-3 Introduction to Fiction  
ENGL 102W-3 Introduction to Poetry  
ENGL 103W-3 Introduction to Drama  
ENGL 104W-3 Introduction to Prose Genres  
ENGL 105W-3 Introduction to Issues in Literature and Culture  
ENGL 199W-3 Introduction to University Writing

and four of the following courses, one of which must be ENGL 201 or 203, and one of which must be ENGL 205 or 206

ENGL 201-3 Medieval Literature  
ENGL 203-3 Early Modern Literature  
ENGL 205-3 Restoration and 18th Century Literature  
ENGL 206-3 Nineteenth Century Literatures in English  
ENGL 207-3 Twentieth Century Literatures in English  
ENGL 210W-3 Writing and Critical Thinking  
ENGL 212-3 Metrics and Prosody  
ENGL 214-3 History and Principles of Rhetoric  
ENGL 216-3 History and Principles of Literary Criticism

Any one, but not more than one, of ENGL 101W, 102W, 103W, 104W, 105W and 199W may be replaced by any three unspecified transfer units in English or in ENGL-Writing. Any one, but not more than one of ENGL 207, 210W, 212, 214 and 216 may be replaced by any three unspecified 200 division transfer units in English.

Students with 18 lower division English transfer units have met the lower division requirements for a major provided those units include any one of ENGL 101W, 102W, 103W, 104W, 105W, or 199W; one of ENGL 201 or 203; one of ENGL 205 or 206; and six additional 200 division units in English.

Students wishing to major in English are strongly advised to submit a formal declaration to this effect to the undergraduate advisor upon completing all lower division requirements.

### Upper Division Requirements

An English major must obtain 32 units in upper division English courses, two of which must come from Group 1 and one from Group 2.

#### Group 1

ENGL 300-4 Old English  
ENGL 304-4 Studies in Medieval Literature  
ENGL 306-4 Chaucer  
ENGL 310-4 Studies in Early Modern Literature Excluding Shakespeare  
ENGL 311-4 Early Shakespeare  
ENGL 313-4 Late Shakespeare  
ENGL 320-4 Studies in 18th Century Literature (1660-1800)  
ENGL 322-4 Studies in the Eighteenth Century British Novel  
ENGL 400W-4 Advanced Old English  
ENGL 404W-4 Topics in Medieval Literature  
ENGL 407W-4 Topics in Early English Drama  
ENGL 410W-4 Topics in Early Modern English Non-Dramatic Literature  
ENGL 416W-4 Milton  
ENGL 420W-4 Topics in 18th Century Literature

#### Group 2

ENGL 354-4 Studies in Canadian Literature before 1920  
ENGL 357-4 Studies in Canadian Literature since 1920  
ENGL 359-4 Studies in the Literature of British Columbia

Eight English units must be at the 400 division, excluding Directed Studies courses (ENGL 441, 442, 443 and 444).

With permission of the department, other English courses of equivalent content may be substituted for those required in Group 1 and 2. The department may designate up to eight units of program related upper division courses that are offered by other departments as being acceptable in fulfilling part of the required units in the major program.

Students must maintain at least a 2.00 grade point average in English courses.

## Honors Program

This program is for those with special interest in English literature and who wish to pursue studies beyond the major program. The honors program requires the study of theory, criticism and research methods in ENGL 364, 465W and 494. The honors essay (ENGL 496) allows for independent research and writing on a topic of the student's choice.

## Lower Division Requirements

Students proposing to enter the honors program complete the same lower division English courses as English majors. ENGL 216 is recommended. Normally a 3.5 GPA in all Simon Fraser University English courses is required for program acceptance and continuance but does not guarantee either.

## Upper Division Requirements

English honors must obtain 52 upper division English units, including one of ENGL 300, 304, and 306; one of ENGL 310, 311 and 313; one of ENGL 320, 322, 327, and 330; and one of ENGL 354, 357 and 359. ENGL 364, 465W, 494 and 496 are required and 20 units must be at the 400 division excluding directed studies courses (ENGL 441, 442, 443 and 444). On completion, students may apply for honors admission.

## Minor Program

### Lower Division Requirements

An English minor must complete 12 units of lower division English courses including two of ENGL 101W-3 Introduction to Fiction  
ENGL 102W-3 Introduction to Poetry  
ENGL 103W-3 Introduction to Drama  
ENGL 104W-3 Introduction to Prose Genres  
ENGL 105W-3 Introduction to Issues in Literature and Culture  
ENGL 199W-3 Introduction to University Writing  
and two of the following courses, one of which must be ENGL 201, 203, 205 or 206.

ENGL 201-3 Medieval Literature  
ENGL 203-3 Early Modern Literature  
ENGL 205-3 Restoration and Eighteenth Century Literature  
ENGL 206-3 Nineteenth Century Literatures in English  
ENGL 207-3 Twentieth Century Literatures in English  
ENGL 210W-3 Writing and Critical Thinking  
ENGL 212-3 Metrics and Prosody  
ENGL 214-3 History and Principles of Rhetoric  
ENGL 216-3 History and Principles of Literary Criticism

Any one but not more than one of ENGL 101W, 102W, 103W, 104W, 105W and 199W may be replaced by any three unspecified transfer units in English or in ENGL – Writing. Any one, but not more than one, of ENGL 207, 210W, 212, 214 and 216 may be replaced by any three unspecified 200 division transfer units in English.

## Upper Division Requirements

An English minor must complete 16 units in upper division English courses, one of which must come from within the grouping ENGL 300, 304, 306, 310, 311, 313, 320, and 322; and one from within the grouping ENGL 354, 357, 359. Four units must be at the 400 division, excluding Directed Studies courses (ENGL 441, 442, 443 and 444). No courses from other departments may be substituted for this program's English courses. Students must maintain at least a 2.00 grade point average in English courses.

## Extended Minor Program

An extended general minor consists of the lower division requirements for a major and the upper division requirements for a minor. Approval by the Department of English advisor is required.

## Languages Other Than English

Most graduate schools require some proficiency in one or two languages other than English. Those contemplating graduate studies should complete language courses other than English.

## English and Canadian Studies Joint Major Program

See "Joint Major Programs" on page 96 for program information.

## English and French Literatures Joint Major Program

See "English and French Literatures Joint Major Program" on page 113 for program information.

## English and Humanities Joint Major Program

See "English and Humanities Joint Major Program" on page 118 for program information.

## English and Women's Studies Joint Major Program

See "English and Women's Studies Joint Major Program" on page 140 for program information.

## Co-operative Education

This program, for students who wish work experience in areas related to English studies, entails planned terms of study and employment. To be admitted, 30 units with a minimum 3.0 CGPA is required. Prior to admission, students must have completed five English courses (15 units) including the lower division requirements for a minor in English. College transfer students must complete at least 15 Simon Fraser University units before being eligible for co-op admission and must satisfy the requirements shown above, or the equivalent. Transfer students who participated in co-op programs elsewhere may be credited with the term(s) already completed. The applicability of such terms depends on the evaluation. Arrangements for the work terms are made through the Faculty of Arts and Social Sciences co-operative education co-ordinators.

To continue in the program, students must maintain a minimum 3.0 CGPA in their academic course work.

Contact the Department of English for information. Also, see "Co-operative Education" on page 212.

# First Nations Studies Program

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### Director

E.C. Yellowhorn BA, BSc (Calg), MA (S Fraser),  
PhD (McG)\*

### Associate Professors

M. Boelscher Ignace MA (Georg August Universitat),  
PhD (S Fraser), co-ordinator, SFU Kamloops  
Program\*\*  
E.C. Yellowhorn BA, BSc (Calg), MA (S Fraser),  
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### Assistant Professors

D.H. Reder BA (C'dia), MA (York, Can),  
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a.g. ross BA, MA (Wash), PhD (Calif)\*

### Instructor

R.J. Reimer BA, MA (S Fraser), PhD-ABD (McM)\*

### Advisory Committee

M. Boelscher Ignace, First Nations Studies Program,  
Department of Sociology and Anthropology  
D. Culhane, Department of Sociology and  
Anthropology  
M.E. Kelm, Department of History  
D. Mellow, Department of Linguistics  
D.H. Reder, Department of English, First Nations  
Studies Program  
R.J. Reimer, Department of Archaeology, First  
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R.D. Russell, Department of Mathematics  
J.R. Welch, Department of Archaeology, School of  
Resource and Environmental Management  
L. Yam, First Nations Studies Program  
E.C. Yellowhorn, Department of Archaeology, First  
Nations Studies Program\*

### Advisor

L. Yam BA (S Fraser), 9091 Arts and Social Sciences  
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\*joint appointment with archaeology

\*\*joint appointment with sociology and anthropology

\*\*\*joint appointment with English

The First Nations Studies Program offers sequential, comprehensive courses rooted in traditional and contemporary aboriginal logic, methodology, practice and theory by a distinguished aboriginal faculty. First Nations studies courses address, inform and reflect a wide range of academic disciplines including archaeology, history, women's studies, linguistics, cultural resource management, sociology and anthropology, fine arts, criminology and English. Current program offerings include a minor, two joint majors with both archaeology and linguistics, a post baccalaureate diploma and two certificates.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

## Minor Program

This program studies traditional and contemporary issues involving aboriginal peoples of North America and Canada in particular. Designed for both First Nations and non-First Nations students, its focus is on First Nations traditional cultures, languages,

indigenous knowledge and histories as well as Indian-White relations, the development of federal and provincial policy toward aboriginal peoples, aboriginal rights and title questions, economic development and self-government. The minor critically presents and examines these issues with the perspectives of aboriginal peoples, and will present research methods pertinent to past, present and future issues affecting aboriginal peoples. In this respect, it is especially relevant for First Nations students who wish to put knowledge of First Nations/aboriginal issues and research skills to practice when serving their communities and nations.

This program may be completed in conjunction with any major or honors bachelor's degree, or with a bachelor of general studies degree. It is expected that First Nations studies courses will be taught by faculty with appointments in First Nations or joint appointments in First Nations and other disciplines.

### Lower Division Requirements

Students complete at least nine units including  
FNST 101-3 The Cultures, Languages and Origins of Canada's First Peoples  
FNST 201-3 Canadian Aboriginal Peoples' Perspectives on History

and at least one course from the following.  
ARCH 200-3 Special Topics in World Prehistory (when topic is Ancient Peoples of British Columbia)  
ARCH 223-3 The Prehistory of Canada  
BISC 272-3 Special Topics in Biology (when topic is Native Ethnobotany)  
HIST 201-3 The History of Western Canada  
LING 160-3 Language, Culture, and Society (when topic appropriate)  
LING 231-3 Introduction to a First Nations Language I  
LING 232-3 Introduction to a First Nations Language II  
SA 286-4 Aboriginal Peoples and British Columbia: Introduction

STAT 203 (or equivalent) and SA 255 (or equivalent course in research methods) are strongly recommended.

Other courses which have First Nations content may be applied toward the minor as an elective, subject to approval by the program director.

### Upper Division Requirements

At least 15 upper division units are required, including at least six units from the following.

FNST 301-3 Issues in Applied First Nations Studies Research  
FNST 401-3 Aboriginal Rights and Government Relations  
FNST 402-3 The Discourse of Native Peoples  
FNST 403-3 Indigenous Knowledge in the Modern World

Students must also complete at least nine units from  
ARCH 332-3 Special Topics in Archaeology I\*  
ARCH 333-3 Special Topics in Archaeology II\*  
ARCH 360-5 Native Cultures of North America  
ARCH 378-3 Pacific Northwest North America  
ARCH 386-3 Archaeological Resource Management  
ARCH 479-3 Directed Readings\*  
FNST 301-3 Issues in Applied First Nations Studies Research\*\*  
FNST 322-3 Special Topics in First Nations Studies  
FNST/HIST 325-4 History of Aboriginal Peoples of North America to 1850†  
FNST/HIST 326-4 History of Aboriginal Peoples of North America Since 1850†  
FNST/WS 327-4 Aboriginal Women in Canada†  
FNST 329-3 Sexuality and Gender: Indigenous Perspectives  
FNST 332-3 Ethnobotany of British Columbia First Nations

FNST/ENGL 360-4 Popular Writing by Indigenous Authors†  
FNST 363-5 Indigenous Poetry, Poetics, Printmaking  
FNST 383-5 Indigenous Technology: Art and Sustainability  
FNST 401-3 Aboriginal Rights and Government Relations  
FNST 402-3 The Discourse of Native Peoples  
FNST 403-3 Indigenous Knowledge in the Modern World  
FNST/CRIM 419-3 Aboriginal/Indigenous Justice†  
FNST/CRIM 429-3 Indigenous Peoples and International Law†  
FNST 433-5 Indigenous Environmental Activism  
FNST 442-3 Directed Readings  
LING 331-3 Description and Analysis of a First Nations Language I  
LING 332-3 Description and Analysis of a First Nations Language II  
LING 430-3 Native American Languages  
LING 431-3 Language Structures I\*\*\*  
LING 432-3 Language Structures II\*\*\*  
SA 386-4 The Ethnography of Politics  
SA 388-4 Comparative Studies of Minority Indigenous Peoples

\*when offered as archaeological field school. This combination counts as only one course for satisfying requirements for the minor.

\*\*\*when not used toward requirement of six units

†only when the topic is an aboriginal language

‡only one of the two courses may be used

Other courses with First Nations content may be applied toward the minor as electives, subject to approval by the program director.

Credit accumulated in the certificate in First Nations studies research may be applied toward the minor in First Nations studies.

## Archaeology and First Nations Studies Joint Major Program

This program focuses and expands expertise in areas where archaeology and First Nations intersect. Offered predominantly at the Burnaby campus, Kamloops program students may also participate.

Joint major students, who will gain insight into ancient and contemporary First Nations cultures in British Columbia and North America, will also learn about aboriginal perspectives on the contemporary world including First Nations issues in archaeology, cultural heritage, resource management, government relations and land claims. Students are trained in material culture studies, techniques and technologies to analyze the ancient and historic past, ancient and modern artistic traditions, conservation and management of archaeological and museum collections, and other public exhibits related to First Nations heritage. Students should plan their program in consultation with First Nations Studies and Archaeology advisors.

### Lower Division First Nations Studies Requirements

Students complete all of  
FNST 101-3 The Cultures, Languages and Origins of Canada's First Peoples  
FNST 201-3 Canadian Aboriginal Peoples' Perspectives on History  
SA 101-4 Introduction to Anthropology

and one of  
LING 100-3 Communication and Language  
LING 160-3 Language, Culture, and Society  
SA 286-4 Aboriginal Peoples and British Columbia: Introduction

### Lower Division Archaeology Requirements

Students complete all of  
ARCH 131-3 Human Origins  
ARCH 201-3 Introduction to Archaeology  
ARCH 272-3 Archaeology of the Old World  
ARCH 273-3 Archaeology of the New World

### Upper Division First Nations Studies Requirements

Students complete at least 22 units of upper division First Nations studies, including all of  
FNST 301-3 Issues in Applied First Nations Studies Research  
FNST 401-3 Aboriginal Rights and Government Relations  
FNST 402-3 The Discourse of Native Peoples  
FNST 403-3 Indigenous Knowledge in the Modern World

and the remaining 10 units from the following.  
CRIM 311-3 Minorities and the Criminal Justice System  
FNST 322-3 Special Topics in First Nations Studies  
FNST/HIST 325-4 History of Aboriginal Peoples of North America to 1850†  
FNST/HIST 326-4 History of Aboriginal Peoples of North America since 1850†  
FNST/WS 327-4 Aboriginal Women in Canada†  
FNST 329-3 Sexuality and Gender: Indigenous Perspectives  
FNST 332-3 Ethnobotany of British Columbia First Nations  
FNST/ENGL 360-4 Popular Writing by Indigenous Authors†  
FNST 363-5 Indigenous Poetry, Poetics, Printmaking  
FNST 383-5 Indigenous Technology: Art and Sustainability  
FNST 419/CRIM 419-3 Aboriginal/Indigenous Justice†  
FNST/CRIM 429-3 Indigenous Peoples and International Law†  
FNST 433-5 Indigenous Environmental Activism  
FNST 442-3 Directed Readings in First Nations Studies  
LING 430-3 Native American Languages  
SA 388-4 Comparative Studies of Minority Indigenous Peoples  
SA 486-4 Aboriginal Peoples and British Columbia: Advanced Seminar

†only one of the two courses may be used

Other First Nations content courses may be applied, subject to approval by the program director.

### Upper Division Archaeology Requirements

Students complete at least 24 units of upper division archaeology including  
ARCH 372-5 Material Culture Analysis  
ARCH 471-5 Archaeological Theory

and at least 14 units from the list below including  
ARCH 386-3 Archaeological Resource Management

and one of  
ARCH 301-3 Prehistoric and Indigenous Art  
ARCH 336-3 Special Topics in Prehistoric and Indigenous Art

and one of  
ARCH 348-5 Archaeological Conservation  
ARCH 349-5 Management of Archaeological Collections

and one of  
ARCH 360-5 Native Cultures of North America  
ARCH 378-3 Pacific Northwest North America

Special topics and/or directed readings courses may be applied toward the program, subject to approval by the program director.

## First Nations Studies and Linguistics Joint Major Program

This joint major will focus and expand expertise where these two disciplines intersect. Students will gain insight into the languages and cultures of British Columbia and North America First Nations people. The program provides in-depth understanding of at least one First Nations language and develops skills related to language teaching and curriculum development. Students should plan their studies in consultation with both the First Nations Studies Program and the Department of Linguistics advisors.

### Lower Division First Nations Studies Requirements

Students complete at least 13 units of lower division First Nations studies courses including all of FNST 101-3 The Cultures, Languages and Origins of Canada's First Peoples  
FNST 201-3 Canadian Aboriginal Peoples' Perspectives on History  
SA 101-4 Introduction to Anthropology  
and three additional units in a 100 or 200 division course with significant First Nations content, subject to approval by the program director. Examples of these courses follow.

ARCH 273-3 Archaeology of the New World  
SA 286-4 Aboriginal Peoples and British Columbia: Introduction

### Lower Division Linguistics Requirements

Students complete at least 15 units of lower division linguistics courses including both of LING 220-3 Introduction to Linguistics  
LING 221-3 Introduction to Phonetics and Phonology  
plus nine additional 100 or 200 division linguistics units. Note that LING 222 is required for many upper division courses. The following are recommended.  
LING 231-3 Introduction to First Nations Language I  
LING 232-3 Introduction to First Nations Language II  
LING 241-3 Languages of the World

Subject to approval by the program director, other lower division courses that have First Nations language content may be applied toward this program

### Upper Division First Nations Studies Requirements

Students complete at least 21 units of upper division First Nations studies including all of FNST 301-3 Issues in Applied First Nations Studies Research  
FNST 322-3 Special Topics in First Nations Studies  
FNST 401-3 Aboriginal Rights and Government Relations  
FNST 402-3 The Discourse of Native Peoples  
FNST 403-3 Indigenous Knowledge in the Modern World

and the remaining six units from the following  
ARCH 360-5 Native Cultures of North America  
ARCH 378-3 Pacific Northwest North America  
CRIM 311-3 Minorities and the Criminal Justice System  
ENGL 453W-4 Aboriginal Literatures  
FNST/HIST 325-4 History of Aboriginal Peoples of North America to 1850†  
FNST/HIST 326-4 History of Aboriginal Peoples of North America since 1850†  
FNST/WS 327-4 Aboriginal Women in Canada†  
FNST 329-3 Sexuality and Gender: Indigenous Perspectives†  
FNST 332-3 Ethnobotany of BC First Nations  
FNST/ENGL 360-4 Popular Writing by Indigenous Authors†  
FNST 363-5 Indigenous Poetry, Peotics, Printmaking

FNST 383-5 Indigenous Technology: Art and Sustainability  
FNST/CRIM 419-3 Aboriginal/Indigenous Justice†  
FNST/CRIM 429-3 Indigenous Peoples and International Law†  
FNST 433-5 Indigenous Environmental Activism  
FNST 442-3 Directed Readings in First Nations Studies  
HIST 427-4 Problems in the History of Aboriginal Peoples  
SA 388-4 Comparative Studies of Minority Indigenous Peoples  
SA 486-4 Aboriginal Peoples and British Columbia: Advanced Seminar

†only one of the two courses may be used

Other courses that have First Nations content may be applied toward this program, subject to approval by the program director.

### Upper Division Linguistics Requirements

Students complete at least 21 units of upper division linguistics courses including two of LING 321-3 Phonology  
LING 322-3 Syntax  
LING 323-3 Morphology  
LING 324-3 Semantics  
LING 330-3 Phonetics

and two of LING 331-3 Description and Analysis of a First Nations Language I  
LING 332-3 Description and Analysis of a First Nations Language II  
LING 408-3 Field Linguistics  
LING 430-3 Native American Languages  
LING 431-3 Language Structures I  
LING 432-3 Language Structures II  
LING 433-3 First Nations Language Mentoring I  
LING 434-3 First Nations Language Mentoring II

and nine additional upper division linguistics units.

The following are recommended.  
LING 309W-3 Sociolinguistics  
LING 335-3 Topics in First Nations Language I  
LING 350-3 First Language Acquisition  
LING 360-3 Linguistics and Language Teaching  
LING 362-3 English as a Second Language: Theory  
LING 407 Historical Linguistics  
LING 435-3 Topics in First Nations Language II  
LING 441-3 Linguistic Universals and Typology

Special topics and/or directed readings courses may be applied toward this program, subject to approval by the program director.

## Post Baccalaureate Diploma in First Nations Studies

Through First Nations Studies courses and courses from other disciplines, the program provides in-depth knowledge of Aboriginal and indigenous issues including First Nations cultures and indigenous knowledge, historical contexts, natural and cultural resource management, and legal and public policy issues. Learners engage in dialogue and discussion around these issues and evaluate them, considering Aboriginal perspectives. This program is comprised of at least 30 units of upper division or graduate level courses. Courses are offered on an ongoing basis at both the Burnaby and Kamloops campuses.

### Admission Requirements

Applicants must have a bachelor's degree with a minimum 2.00 GPA from a BC university, or a 2.4 GPA from a university outside of BC, or equivalent. Students can apply for entry in the fall, spring or summer terms. Consult with the Burnaby or Kamloops program offices for admission deadlines.

## Program Requirements

The post baccalaureate diploma (PBD) program can be completed through full-time or part-time study, or a combination by attending Simon Fraser University's Burnaby and/or Kamloops locations. Upon University admission, students must be approved for entry and must complete a PBD course plan. Completion is expected within two or three years, to a maximum of five years, with a 2.5 GPA in all diploma courses. Transfer credit may be approved if it meets the program requirements, and at least 18 of the 30 required units are completed at Simon Fraser University. Transfer credit application must be initiated at the time of University application. Credit applied to this program may not be applied to another Simon Fraser University certificate, diploma or degree, or vice-versa.

### Prerequisite Courses

Students complete both of FNST 101-3 The Cultures, Languages and Origins of Canada's First Peoples  
FNST 201-3 Canadian Aboriginal Peoples' Perspectives on History

### Core Courses

Students complete all of FNST 301-3 Issues in Applied First Nations Studies Research  
FNST 401-3 Aboriginal Rights and Government Relations  
FNST 402-3 The Discourse of Native Peoples  
FNST 403-3 Indigenous Knowledge in the Modern World

### First Nations Studies Elective Courses

Students complete at least two of FNST 322-3 Special Topics in First Nations Studies  
FNST 332-3 Ethnobotany of British Columbia First Nations  
FNST 442-3 Directed Readings in First Nations Studies

### Additional Electives

The remaining 12 elective units will be chosen by completing additional units from the list above (FNST 322, 332, 442) and/or from the following courses.

ARCH 360-5 Native Cultures of North America  
ARCH 386-3 Archaeological Resource Management\*  
ARCH 435-6 Fieldwork Practicum\*  
CRIM 311-3 Minorities and the Criminal Justice System  
FNST/HIST 325-4 History of Aboriginal Peoples of North America to 1850†  
FNST/HIST 326-4 History of Aboriginal Peoples of North America since 1850†  
FNST/WS 327-4 Aboriginal Women in Canada†  
FNST 329-3 Sexuality and Gender: Indigenous Perspectives  
FNST/ENGL 360-4 Popular Writing by Indigenous Authors†  
FNST 363-5 Indigenous Poetry, Poetics, Printmaking  
FNST 383-5 Indigenous Technology: Art and Sustainability  
FNST/CRIM 419-3 Aboriginal/Indigenous Justice†  
FNST/CRIM 429-3 Indigenous Peoples and International Law†  
FNST 433-5 Indigenous Environmental Activism  
LING 331-3 Description and Analysis of a First Nations Language I  
LING 332-3 Description and Analysis of a First Nations Language II  
LING 430-3 Native American Languages  
LING 431-3 Language Structures I  
LING 432-3 Language Structures II  
LING 433-3 First Nations Language Mentoring I  
LING 434-3 First Nations Language Mentoring II  
SA 386-4 Native Peoples and Public Policy

SA 388-4 Comparative Studies of Minority Indigenous Peoples

SA 486-4 Aboriginal Peoples and British Columbia: Advanced Seminar

\*if topic is appropriate

†only one of the two courses may be used

Additional upper division courses with First Nations content, as well as graduate courses, may be approved by the Faculty of Arts and Social Sciences to be used to satisfy program requirements.

## SFU Kamloops Program

365 Yellowhead Highway, Kamloops, BC V2H 1H1, 250.828.9799 Tel, or 1.800.399.5565 toll free Tel, 250. 828.9864 Fax, www.sfu.ca/kamloops, sfu\_kamloops@sfu.ca

## Collaborative Major Program with Thompson Rivers University

Applications are not being accepted for the 2009/2010 academic year.

This collaborative major is a joint initiative between Thompson Rivers University (TRU) and Simon Fraser University, the latter facilitated through the University's Aboriginal partnership program on the Kamloops Indian Reserve in the BC Interior. The program is available to Simon Fraser University and Thompson Rivers University students who wish to complete this major as part of their degree requirements for either a TRU or Simon Fraser University bachelor of arts degree.

Courses marked with † are offered at Thompson Rivers University.

### Lower Division Requirements

(24-25 units)

#### Required Courses

Students complete

FNST 201-3 Canadian Aboriginal Peoples' Perspectives on History\*

and either both of

LING 231-3 Introduction to First Nations Language I  
LING 232-3 Introduction to First Nations Language II

or, for those with an introductory or intermediate level background in an Aboriginal language, both of  
LING 433-3 First Nations Language Mentoring I  
LING 434-3 First Nations Language Mentoring II

and one of

ANTH 214-3 Canadian Native Peoples†  
FNST 101-3 The Cultures, Languages and Origins of Canada's First Peoples\*

and one of

ANTH 121-3 Introduction to Cultural Anthropology†  
SA 101-4 Introduction to Anthropology

and one of

ANTH 119-3 Introduction to Archaeology†  
ARCH 100-3 Ancient Peoples and Places  
ARCH 201-3 Introduction to Archaeology

\*also available as distance education courses

#### Elective Courses

Students must also complete at least six units of elective courses, with First Nations/Aboriginal studies content, selected from the following.

ANTH 219-3 Ancient North Americans†  
ANTH 223-3 Indians of British Columbia†  
ANTH 260-3 Minorities in the Modern World†  
ARCH 200-3 Special Topics in World Prehistory  
ARCH 223-3 The Prehistory of Canada  
ARCH 273-3 Archaeology of the New World  
CNST 200-3 Introduction to Canadian Studies†  
ENG 241-3 Canadian Native Literature†

GEOG 223-3 The Regional Geography of BC and the Yukon†

HIST 201-3 The History of Western Canada

HIST 202-3 Native History of Canada†

SA 286-4 Aboriginal Peoples and British Columbia: Introduction

SOCI 201-3 Race and Ethnic Relations†

TMGT 102-3 Cultural, Heritage and Nature

Interpretation†

To meet this group requirement, and with the approval of the program advisor, students may use other Simon Fraser University or TRU courses that contain significant First Nations/Aboriginal studies content.

#### Recommended Courses

In addition, the following are strongly recommended.

SA 255-4 Introduction to Social Research

and one of

MATH 120-3 Introduction to Statistics†

STAT 203-3 Introduction to Statistics for the social Sciences

### Upper Division Requirements

Students complete at least 30 upper division units from Simon Fraser University or from Thompson Rivers University. It is the student's responsibility to ensure that they have met the prerequisites for the upper division courses in which they wish to enrol.

#### Required Courses

Students complete 12 units including both of  
FNST 301-3 Issues in Applied First Nations Studies Research  
FNST 403-3 Indigenous Knowledge in the Modern World

and one of

ANTH 327-3 First Nations Natural Resource Management†

FNST 401-3 Aboriginal Rights and Government Relations

and one of

ENG 447-3 Studies in Aboriginal Literature†  
FNST 402-3 The Discourse of Native Peoples

#### Group Requirements

In addition to the above, students must complete at least one course from each of the following groups.

To meet this group requirement, and with the approval of the program advisor, students may use other Simon Fraser University or TRU courses that contain significant First Nations/Aboriginal studies content.

FNST 322 and 442 may be used to fulfil this group requirement only if the topics are deemed appropriate to at least one of the four group titles as shown below.

*Group I Aboriginal Language and/or Linguistics of Aboriginal Languages, Indigenous Philosophy, Literature, Fine and Performing Arts*

ENG 447-3 Studies in Aboriginal Literature† \*\*

FNST 322-3 Special Topics in First Nations Studies

FNST 402-3 The Discourse of Native Peoples \*\*

FNST 442-3 Directed Readings in First Nations Studies

LING 323-3 Morphology\*

LING 331-3 Description and Analysis of a First Nations Language I

LING 332-3 Description and Analysis of a First Nations Language II

LING 335-3 Topics in First Nations Language I:

Teaching and Learning an Aboriginal Language

LING 430-3 Native American Languages

LING 431-3 Language Structures I

LING 432-3 Language Structures II

LING 433-3 First Nations Language Mentoring I

LING 434-3 First Nations Language Mentoring II

LING 435-3 Special Topics in Linguistics II: Topics in First Nations Language II

*Group II Aboriginal History and Public Policy*

ANTH 405-3 Canadian Status Treaty Indian Reserve Communities†

FNST 322-3 Special Topics in First Nations Studies

FNST/HIST 325-4 History of Aboriginal Peoples of North America to 1850\*\*\*

FNST/HIST 326-4 History of Aboriginal Peoples of North America since 1850\*\*\*

FNST 401-3 Aboriginal Rights and Government Relations\*\*

FNST 419/CRIM 419-3 Aboriginal/Indigenous Justice\*\*\*

FNST/CRIM 429-3 Indigenous Peoples and International Law\*\*\*

FNST 442-3 Directed Readings in First Nations Studies

SA 386-4 Native Peoples and Public Policy

*Group III Cultural and Natural Resource Management and Archaeology*

ANTH 306-3 Summer Field Training in Archaeology†\*

ANTH 327-3 First Nations Natural Resource Management† \*\*

ANTH 420-3/6 Archaeology of British Columbia†

ARCH 349-5 Management of Archaeological Collections\*

ARCH 365-3 Ecological Archaeology\* (or ANTH 326†)

ARCH 372-5 Material Culture Analysis\*

ARCH 386-3 Archaeological Resource Management\*

ARCH 435-6 Field Work Practicum\* (or ANTH 411-3/6†)

ARCH 485-5 Lithic Technology\*

FNST 322-3 Special Topics in First Nations Studies

FNST 332-3 Ethnobotany of British Columbia First Nations

FNST 442-3 Directed Readings in First Nations Studies

*Group IV Comparative Study of Indigenous and Aboriginal Peoples*

ANTH 401-3 Native Peoples of North America†

ANTH 404-3 Peoples and Cultures of the North American Arctic†

ARCH 360-5 Native Cultures of North America

CRIM 311-3 Minorities and the Criminal Justice System

ENG 446-3 Studies in Commonwealth Post Colonial Literature: Indigenous Literatures of Canada, Australia and New Zealand†

FNST 322-3 Special Topics in First Nations Studies

FNST 442-3 Directed Readings in First Nations Studies

SA 388-4 Comparative Studies of Minority Indigenous Peoples

SA 486-4 Aboriginal Peoples and British Columbia: Advanced Seminar

\*if the topic includes a significant component of First Nations/Aboriginal content

\*\*students may count this for credit if this course(s) was not used as an upper division required course

\*\*\*only one of the two courses may be used

†Thompson Rivers University course

#### Elective Courses

If, after meeting the upper division required courses and group requirements, the total upper division units is less than 30, the student is required to complete an additional three to eight units of electives from any of the above *Upper Division Group Requirement* courses, or from additional courses in FNST, or with First Nations/Aboriginal studies content offered at either Simon Fraser University or TRU.

## Certificate in First Nations Studies Research

This program explores the history, prehistory, culture, language and contemporary situation of Canadian Aboriginal peoples, and teaches basic research skills

about First Nations/Aboriginal issues with emphasis on BC Interior Aboriginal people. All program can be completed at the Kamloops site or the Burnaby campus. Normal completion requires five full time terms. The certificate, which can be completed as a two year program or as part of a BA, is especially suited to Aboriginals who wish to gain proficiency in First Nations/Aboriginal issues, social research skills, and basic cultural resource management skills. It is also open to non-Aboriginal students.

### Admission Requirements

Normal University admission requirements apply. Students may be admitted under regular or special categories. Assistance is available at the Kamloops site office or First Nations Studies' Burnaby office.

### Lower and Upper Division Requirements

Requirements include

- successful completion of at least 30 units, of which a minimum 18 are earned by completing six required courses. In addition, students complete one practicum option (Option 1, 2, or 3). The remaining nine units are selected from the specified list of optional courses.
- minimum grade point average of 2.0 calculated on all courses applied to the certificate. Duplicate courses are counted only once.
- completion of the certificate normally within five years of program admission.

Students complete all of  
 ARCH 273-3 Archaeology of the New World  
 FNST 201-3 Canadian Aboriginal Peoples' Perspectives on History  
 FNST 301-3 Issues in Applied First Nations Studies Research  
 LING 231-3 Introduction to First Nations Language I plus one of  
 FNST 101-3 The Cultures, Languages and Origins of Canada's First Peoples  
 SA 286-4 Aboriginal Peoples and British Columbia: Introduction

plus one of  
 ARCH 201-3 Introduction to Archaeology  
 SA 101-4 Introduction to Anthropology (A)

The following course is strongly recommended.  
 SA 255-4 Introduction to Social Research (SA)

plus nine additional units\*\* chosen from  
 ARCH 200-3 Special Topics in World Prehistory\*  
 ARCH 332-3 Special Topics in Archaeology I\*  
 ARCH 333-3 Special Topics in Archaeology II\*  
 ARCH 336-3 Special Topics in Prehistoric and Indigenous Art  
 ARCH 360-5 Native Cultures of North America  
 ARCH 386-3 Archaeological Resource Management\*  
 FNST 101-3 The Cultures, Languages and Origins of Canada's First Peoples  
 FNST 322-3 Special Topics in First Nations Studies  
 FNST/HIST 325-4 History of Aboriginal Peoples of North America to 1850†  
 FNST/HIST 326-4 History of Aboriginal Peoples of North America since 1850†  
 FNST/WS 327-4 Aboriginal Women in Canada  
 FNST 329-3 Sexuality and Gender: Indigenous Perspectives  
 FNST 332-3 Ethnobotany of British Columbia First Nations  
 FNST/ENGL 360-4 Popular Writing by Indigenous Authors  
 FNST 363-5 Indigenous Poetry, Poetics, Printmaking  
 FNST 383-5 Indigenous Technology: Art and Sustainability  
 FNST 401-3 Aboriginal Rights and Government Relations  
 FNST 402-3 The Discourse of Native Peoples  
 FNST 403-3 Indigenous Knowledge in the Modern World

FNST/CRIM 419-3 Aboriginal/Indigenous Justice†  
 FNST/CRIM 429-3 Indigenous Peoples and International Law†  
 FNST 433-3 Indigenous Environmental Activism  
 FNST 442-3 Directed Readings in First Nations Studies  
 LING 160-3 Language, Culture and Society  
 LING 232-3 Introduction to a First Nations Language II  
 SA 386-4 The Ethnography of Politics (SA)\*  
 SA 388-4 Comparative Studies of Minority Indigenous Peoples (SA)  
 SA 486-4 Aboriginal Peoples and British Columbia: Advanced Seminar (A)  
 WS 200-3 Women in Cross-Cultural Perspective\*

\*when topic is appropriate

\*\*other courses that have significant First Nations/Aboriginal content may be counted towards this certificate with First Nations Studies approval †only one of the two courses may be used and may count toward the certificate  
 (A) anthropology courses; (S) sociology courses

The program's practicum component can be fulfilled by selecting one of three options. Some courses within each option have prerequisites; accordingly, students should plan their programs in advance.

#### Option 1

SA 141 or ARCH 350 is required. This is the first term of co-operative education in either sociology and anthropology, or archaeology. The employment situation must be acceptable to the First Nations Studies research program.

#### Option 2

At least five units of an archaeology field school, involving survey and excavation of a First Nations heritage site are required. The Kamloops site offers a 14 unit archaeology field school bi-annually.

#### Option 3

FNST 442 is required, which permits a faculty member to supervise an independent field research project acceptable to the First Nations Studies research certificate.

**Note:** Some Burnaby or Vancouver campus courses may be used toward the certificate with steering committee approval. A three course maximum (10 units) of comparable content and level from an approved college or university may be transferred, subject to University regulations and certificate steering committee approval. Units applied to this certificate may also be applied to a major or minor or bachelor's degree under normal program regulations, but may not be applied to another Simon Fraser University certificate or diploma.

### Co-operative Education

In conjunction with other Faculty of Arts and Social Sciences departments and other faculties offering co-op education, eligible First Nations studies minors may apply for work placements in native groups or with private, public and non-profit sectors employers.

## Department of French

2630 Diamond Building, 778.782.4740 Tel,  
 778.782.5932 Fax, [www.sfu.ca/french](http://www.sfu.ca/french)

#### Chair

R. Canac-Marquis BA, MA (UQAM), PhD (Mass)

#### Professors Emeriti

R. Davison BA, MA, PhD (McG)  
 M.C. Fauquenoy LèsL, Dr3eCycle (Paris), Chev  
 Palmes Acad France, FRScan  
 G. Merler BA (Br Col), MA, PhD (Laval)  
 J. Viswanathan LèsL (Liège), MA (Ill), DèSL (Liège)  
 P.M. Wrenn BA, MA, PhD (Tor)

#### Associate Professors

C. Black BA (Grenoble), MA (Wat), PhD (Laval)  
 R. Canac-Marquis BA, MA (UQAM), PhD (Mass)  
 S. Steele BA, MA (Br Col), PhD (Tor)

#### Assistant Professors

J. Calderón BA, MA (Queens), PhD (McG)  
 L. Frappier BA, MA, PhD (Montr)  
 C. Guilbault BA, MA (Laval), PhD (Alta)  
 G. Planchenault MA (Paris), MA (Jussieu), PhD (Lond)  
 C.B. Vigouroux MA, DEA, PhD (Paris)

#### Senior Lecturers

L. Bruneau BA (Qu), MEd (S Fraser)  
 C. Trépanier BA, MA (Laval)

#### Lecturers

C. Bossavit Metedue, MA (Grenoble)  
 P. De Rycke MA, DEA, Dr3eCycle (Paris)  
 C. Rasskeh BA, MA (Br Col)

#### Advisor

Miss B. Harrison BA (Birm), 2630 Diamond Building,  
 778.782.4505, [bharriso@sfu.ca](mailto:bharriso@sfu.ca)

The Department of French offers honors, major and extended minor programs encompassing French language, literature and linguistics. In addition, joint major programs are available in English and French literatures, in French, history and political science, and in French and humanities. A certificate program in French language proficiency is also offered for those who wish to enhance their knowledge of French for cultural, professional or employment purposes. The department also offers a certificate in Italian studies (see page 114).

### Initial Course Selection (French)

Native French speakers, or those who received secondary education entirely within a French-speaking community will not normally be admitted to a French language course numbered 100 to 300 inclusive.

#### French Language Placement Test

Students qualifying in the following categories need not complete the placement test but should enrol in the course indicated below.

- BC grade 12 French completed within the last three years with a final grade of A: enrol in **FREN 211**
- BC grade 12 French completed (irrespective of grade) within the last three years and who have subsequently spent at least five weeks in a French-speaking environment: enrol in **FREN 211**
- BC grade 12 French completed within the last three years who do not meet either of the above two conditions: enrol in **FREN 210**
- Students who have completed grade 11 French within the last three years and have not completed anymore French since: enrol in **FREN 122**
- Fewer than three years of French completed in high school and no other French: enrol in **FREN 121**
- No French at all: enrol in **FREN 120**
- High school in a Francophone educational system in a Francophone country or province: enrol in **FREN 230/240, 270, or 301**

All others are **required** to complete the placement test including the following.

- French immersion, Francophone programme, IB and AP students
- college/university transfer students with transfer units in French
- students from other provinces or countries
- students who have completed any credit/non-credit French course of six or more weeks duration since high school
- students who have lived (minimum 30 months) in a Francophone environment

- special cases and any students seeking advice on eligibility to earn challenge credit for 210, and/or 211, and/or 221, and/or 222

See [www.sfu.ca/french](http://www.sfu.ca/french) for test dates and times.

### Course Challenge

Up to 12 lower division French units may be challenged by students who place in more advanced language courses. Courses open to challenge are: FREN 210, 211 or 212, 221 or 222. Students may challenge lower division language courses only when enrolled in one of FREN 211 (or 212), 221, 222, and 301. Challenge of language courses lower than the one in which the student is actually enrolled may be initiated by a course challenge form available from the French general office. The challenge must have department approval and be submitted to Student Services prior to the tenth day of classes. Successful completion (with at least a C grade) of the language course actually completed automatically adds the challenge credit to the student's transcript. Please see "Course Challenge" on page 28.

Many FREN courses were renumbered effective fall 2003. Students with FREN credit prior to this time should consult the department advisor.

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements. See "Writing, Quantitative, and Breadth Requirements" on page 7 for more information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

### Honors, Major, Extended Minor Programs

For program approval, a student must have successfully completed (i.e. obtained a minimum 2.0 grade or better in each of) the following courses or equivalents: FREN 210, 211 or 212, 221, 222, 230 or 240 and 270. Students who place in FREN 301 in the placement test will complete only FREN 230/240 and FREN 270 prior to acceptance in the program.

For a French degree, the following are required.

#### Lower Division Requirements

Students complete all of  
FREN 210-3 Intermediate French I\*  
FREN 211-3 Intermediate French II\* (or 212)  
FREN 221-3 French Writing I\*  
FREN 222-3 French Writing II\*  
FREN 270-3 Introduction to French Linguistics I

and one of  
FREN 230-3 Introduction to French-Canadian Literature

FREN 240-3 Introduction to French Literature: Modern French Literature

\*exemption is gained by successful completion of a more advanced French language course. Lower division language courses may be challenged if students wish to receive credit (see above).

#### Upper Division Requirements

##### Major

Students complete all of  
FREN 301-3 Advanced French Composition  
FREN 360-3 Intermediate French Literature  
FREN 370-3 Introduction to French Linguistics II

plus 21 units of French, to be chosen from among the remaining courses at the 300 and 400 division, must be completed.

**Note:** A minimum of 12 of the remaining 21 units must be from 400 division French courses.

##### Honors

Students complete all of  
FREN 301-3 Advanced French Composition  
FREN 360-3 Intermediate French Literature  
FREN 370-3 Introduction to French Linguistics II  
plus 41 units of French, to be chosen from among the remaining courses at the 300 and 400 division, must be completed.

**Note:** A minimum of 24 of the remaining 41 units must be from 400 division French courses, including the following which should be completed during the last terms of study.

FREN 491-3 Readings in French Linguistics and/or Literary Criticism  
FREN 492-3 Honors Essay

In addition, the honors student must acquire proficiency (i.e. the equivalent of two terms) in another language in addition to English and French.

##### Extended Minor

Students complete  
FREN 301-3 Advanced French Composition I

and one of  
FREN 360-3 Intermediate French Literature  
FREN 370-3 Introduction to French Linguistics II

A further nine units of French, to be chosen from among the remaining courses at the 300 and 400 division, must be completed.

#### French Language Cohort Program in Public Administration and Community Services Extended Minor

Students complete  
FREN 301-3 Advanced French Composition

and one of  
FREN 425-3 Topics in the Varieties of French  
FREN 452-3 Topics in French Cultures

A further nine units of French, to be chosen from among the remaining 300 and 400 division courses, must be completed. (FREN 360 and/or 370 may be completed in partial fulfilment of this requirement.)

See "Political Science Major, French Extended Minor Program Requirements" on page 130.

### Courses in French

Courses are offered in the following fields.

#### French Language

FREN 120-3 French for Beginners  
FREN 121-3 Introductory French I  
FREN 122-3 Introductory French II  
FREN 199-3 Writing French I: Spelling and Grammar\*  
FREN 210-3 Intermediate French I  
FREN 211-3 Intermediate French II  
FREN 212-3 French for Immersion Program Students  
FREN 215-3 Intermediate French Language: Oral Practice  
FREN 217-3 French Pronunciation  
FREN 221-3 French Writing I  
FREN 222-3 French Writing II  
FREN 225-3 Topics in French Language  
FREN 299-3 Writing French II: Intermediate Composition\*  
FREN 300-3 Advanced French: Oral Practice  
FREN 301-3 Advanced French Composition  
FREN 304-3 Advanced French Grammar  
FREN 307-3 French Vocabulary

\*restricted entry to these distance education courses

#### French Linguistics

FREN 301, 304 and 307 represent the formal culmination (but not the end) of the student's training in French language use. FREN 270 and 370 represent the bridge between this knowledge of French (i.e. ability to use) and a knowledge about

French (i.e. how to approach, analyze and describe various linguistic aspects of the French language). These latter concerns form the central objectives of the 400 division French linguistics courses. Topics courses may be completed more than once for credit, provided that the content is different each time.

##### Linguistic Theories

FREN 270-3 Introduction to French Linguistics I  
FREN 370-3 Introduction to French Linguistics II  
FREN 424-3 Topics in French Linguistics

##### Structure of French

FREN 411-3 Aspects of French Morphology  
FREN 412-3 Aspects of French Syntax  
FREN 413-3 Aspects of French Phonetics and Phonology  
FREN 415-3 Aspects of French Semantics and Lexicology

##### Evolution of French

FREN 423-3 Topics in the History of French

##### French Dialects

FREN 425-3 Topics in the Varieties of French

##### French Applied Linguistics

FREN 416-3 French Applied Linguistics

### French Literature

#### 200 Division Courses

FREN 240 and 230 introduce basic concepts and methods of literary analysis and sociocultural background of a few short modern French and French Canadian fiction, drama and poetry works. They also improve language competence: all lectures, class discussions and assignments are in French. FREN 230 or 240 are prerequisites for FREN 360.

#### 300 Division Courses

FREN 360 continues the introduction to the textual analysis of literary texts (fiction, drama and poetry) offered in 240, 230. The historical background of the works selected from the Middle Ages to the 19th century is also discussed. FREN 360 is a prerequisite for all 400 division French literature courses.

#### 400 Division Courses

These courses study specific literary movements or genres through various critical approaches: thematic or structural. The emphasis is on close textual analysis rather than literary history.

##### 400 Division Courses on Literary Movements and Periods

FREN 461-3 French Medieval Literature  
FREN 462-3 French Renaissance Literature  
FREN 463-3 Literature of the Seventeenth Century  
FREN 465-3 Literature of the Eighteenth Century  
FREN 467-3 Romanticism  
FREN 470-3 Realism to Naturalism  
FREN 476-3 Interdisciplinary Approaches to French Studies

##### 400 Division Courses on Genres

FREN 430-3 Topics in French-Canadian Literature  
FREN 472-3 The Contemporary Theatre  
FREN 474-3 French Poetry  
FREN 475-3 The Contemporary Novel

### French Linguistics/Literature

The following courses are for students who, once they have acquired a sufficient background in linguistics and literary criticism, wish to explore the relationship between the two disciplines.

FREN 410-3 French Stylistics  
FREN 480-2 Seminar I  
FREN 491-3 Readings in French Linguistics and/or Literary Criticism  
FREN 492-3 Honors Essay

### French Civilization and Cultures

FREN 330-3 Francophone World  
FREN 452-3 Topics in French Cultures



**Other Course(s)**

The following is taught in English and available to students who do not wish to specialize in French.

FREN 198-3 French for Reading Knowledge I

## English and French Literatures Joint Major Program

The joint major is an interdepartmental program, usually within a BA, to explore the many close relationships between English and French literatures.

**Advisors**

Miss B. Harrison BA (Birm), Department of French, 2630 Diamond Building, 778.782.4505

Ms. K. Ward, Department of English, 6133 Academic Quadrangle, 778.782.4835

**Lower Division Requirements**

Students complete the same lower division prerequisites as for both English and French majors.

**French (15 units)**

Students complete all of  
FREN 210-3 Intermediate French I  
FREN 211-3 Intermediate French II  
FREN 221-3 French Writing I  
FREN 222-3 French Writing II

(or exemption from all of FREN 210, 211, 221, 222)

and one of

FREN 230-3 Introduction to French-Canadian Literature

FREN 240-3 Introduction to French Literature: Modern French Literature

**Recommended**

FREN 270-3 Introduction to French Linguistics I

**English**

Students complete the lower division requirements of the English major program.

**Upper Division Requirements**

Students complete 21 upper division French and 20 upper division English units for a literary studies specialization and complementary courses as follows.

**French**

Students complete both of  
FREN 301-3 Advanced French Composition  
FREN 360-3 Intermediate French Literature 6 units

plus one of

FREN 300-3 Advanced French: Oral Practice  
FREN 304-3 Advanced French Grammar  
FREN 307-3 French Vocabulary  
FREN 330-3 Francophone World

plus 12 units from 400 division French literature courses.

The following are recommended if the student is interested in the linguistic analysis of literary texts.

FREN 370-3 Introduction to French Linguistics II  
FREN 410-3 French Stylistics

**English**

Please refer to the Department of English (see "Department of English" on page 106).

## French, History and Politics Joint Major Program

**Steering Committee**

S. Steele, Department of French  
L. Dobuzinkis, Department of Political Science (vacant), Department of History

**Advisors**

Miss B. Harrison BA (Birm), Department of French, 2630 Diamond Building, 778.782.4505, bharriso@sfu.ca

Mrs. T. Wright BA (S Fraser), Department of History, 6026 Academic Quadrangle, 778.782.3446

Ms. L. Kool, Department of Political Science, 6025 Academic Quadrangle, 778.782.3588

This program concentrates on languages, literature, history and politics of France and French-speaking peoples of Canada and the world. It prepares for careers in teaching, journalism, archival work, civil and diplomatic services and is offered by the Departments of French, History and Political Science. It is organized into three main themes: the French-speaking peoples of Canada, the French-speaking peoples of France and Europe, and the French-speaking peoples of the world. Students are not confined to any one theme; they may complete any combination of courses within the program. The only requirement is that there must be some demonstrable French content in the course.

The relevance of courses is frequently obvious, e.g., courses dealing with France, French Canada, and the French language, but in cases where there is doubt as to sufficient French content, the student should consult the appropriate steering committee representative and review the *Guidelines for Course Selection* (contained in the information brochure relating to the joint major) which lists suitable sample courses. The program is in nature: the emphasis is on the role played in the world by French language, literature, history and politics; hence the selected courses may represent a variety of interests.

Courses offered by the Canadian studies program might be of interest to many students.

**Lower Division Requirements**

As prerequisites, the following 42 units are required.

12 units of history  
12 units of political science  
15 units of French\*  
3 additional units of history or political science

\*see below for possible exemptions for those already proficient in French

**Upper Division Requirements**

The following are required for a total of 48 units.

16 units of history  
16 units of political science  
15 units of French (FREN 301, 360 or 370 and nine units of 400 division courses)

**French**

Students must acquire appropriate proficiency in both oral and written French by completing a certain number of French language courses. Exemption can be obtained through a placement test administered by the Department of French. The course challenge procedure may also be used to fulfil lower division language requirements in part or in full.

**Lower Division**

Students complete all of  
FREN 210-3 Intermediate French I (or exemption)  
FREN 211-3 Intermediate French II (or exemption)  
FREN 221-3 French Writing I (or exemption)  
FREN 222-3 French Writing II (or exemption)

and one of

FREN 230-3 Introduction to French-Canadian Literature

FREN 240-3 Introduction to French Literature: Modern French Literature

FREN 270-3 Introduction to French Linguistics I

**Recommended**

FREN 215-3 French Language: Oral Practice

**Upper Division**

Students complete  
FREN 301-3 Advanced French Composition

and one of

FREN 360-3 Intermediate French Literature

FREN 370-3 Introduction to French Linguistics II

**Note:** Students wishing to complement this joint major specialization with greater competence in oral and written French may complete FREN 300 or 330 and FREN 304 in addition to the above requirements. FREN 330 is highly recommended.

At least nine units must be at the 400 division.

Students may choose courses in consultation with the Department of French student advisor or the representative of the Department of French on the program steering committee.

**History**

See the Department of History for requirements.

**Political Science**

Students complete 12-15 lower division units and at least 16 upper division political science units. Choose courses in consultation with the political science student advisor or the representative of the Department of Political Science on the program steering committee after reviewing the *Guidelines for Course Selection*. Such choices must fit with the thematicity criteria of the joint major to the satisfaction of the steering committee.

## French and Humanities Joint Major Program

See "French and Humanities Joint Major Program" on page 118 for information.

## Certificate in French Language Proficiency

This program is for students who may or may not be enrolled in a degree program and who wish to improve oral and written French proficiency. It is also for those who wish to enhance their knowledge of the language for cultural or professional needs. The program is not intended for native French speakers.

Recommendations for the award of the certificate will be made by the Department of French and the Faculty of Arts and Social Sciences.

**Admission Requirements**

Normal University admission regulations apply.

**Requirements**

Students will successfully complete 30 units, of which 21 units are earned by completing seven required courses. The remaining nine units may be selected from any other French courses, excluding FREN120, 121, 122, 198, and 342.

Students complete all of

FREN 210-3 Intermediate French I

FREN 211-3 Intermediate French II (or 212)

FREN 215-3 Intermediate French Language: Oral Practice

FREN 221-3 Writing French I

FREN 222-3 Writing French II

FREN 301-3 Advanced French Composition

and one of

FREN 230-3 Introduction to French-Canadian Literature

FREN 240-3 Introduction to French Literature: Modern French Literature

**Recommended**

FREN 300-3 Advanced French: Oral Practice

FREN 330-3 Francophone World

FREN 304-3 Advanced French Grammar

Program completion normally takes five to six terms. A minimum 2.5 GPA is calculated on all Simon Fraser

University courses that are applied to the certificate. Duplicate courses are counted only once.

**Note:** It is possible to obtain exemption, up to a maximum of 12 units, from lower division French language courses by being placed in a more advanced French language course. Exempted courses must be replaced with credit obtained by

- approved transfer credit for French courses completed at another post-secondary institution (subject to University transfer credit regulations), up to a maximum of six units
- challenge credit for exempted courses (subject to University regulations governing approval of challenge credit), up to a maximum of six units
- successful completion of other French courses at the University, excluding FREN 120, 121, 122, 198, and 342.

Students who gain, or hope to gain, exemption should consult the advisor early. In accordance with certificate regulations (see page 7), units for the certificate may be applied also to majors or extended minors or to a bachelor's degree.

## Post Baccalaureate Diploma in French and Education

The Department of French and the Faculty of Education jointly offer this program comprising a set of courses for practising or future French teachers. This program includes courses directly related to the pedagogy of French as a second language as well as courses enhancing previous language competence, or knowledge of French literature or linguistics.

### Admission Requirements

Students must seek University admission or readmission and, once admitted, must separately apply to the Department of French advisor for diploma program admission. Qualifications for application to the program include the following.

- The completion of a recognized bachelor's degree with a minimum graduation 2.0 GPA from British Columbia institutions and 2.4 from institutions outside the province. University course work undertaken subsequent to the bachelor's degree will also be considered for admissibility to this program.
- A demonstrated knowledge of spoken and written French e.g. competence equivalent to successful completion of FREN 222.

Application packages are available from the Department of French and the Faculty of Education. Before applying, consult with the French department advisor, Miss B. Harrison, 778.782.4505.

### Program Requirements

Students will successfully complete an approved program comprised of at least 30 upper division units. Graduate courses may be completed with prior approval. Normally 15 units are completed from each of the French and education course lists below. A minimum 2.5 CGPA is necessary. The diploma must be completed within five years of program admission. Teachers seeking a reclassification should note that, since integrated programs are looked upon as upgrading work, all courses must be completed no more than 10 years before the date of reclassification through the Teachers' Qualification Service.

Formal graduation application is made through Student Services. See "Academic Calendar of Events" on page 12 for graduation deadlines.

### Transfer Credit

Transfer credit for course work in education and/or in French may be considered to fulfil requirements for this program. A maximum of six transfer units in each of French and education may be awarded.

### French Requirements

Students normally choose 15 units from the following courses including a minimum of two of  
FREN 304-3 Advanced French Grammar  
FREN 307-3 French Vocabulary  
FREN 416-3 French Applied Linguistics

The remaining units may be selected from 300 and 400 division French courses except FREN 342.

Please note that all course selections must be approved by the advisor in the French department.

Students with credit for the above courses or equivalents must select approved substitutes from upper division French courses. Students with no previous undergraduate courses in French linguistics or French literature must complete the lower division prerequisites FREN 270 and/or FREN 230/240.

### Education Requirements

Students normally choose 15 units from among the following courses, including both of  
EDUC 441-4 Multicultural Education  
EDUC 450-4 French Curriculum Studies

The remaining units may be chosen from  
EDUC 325-3 Assessment of Classroom Teaching  
EDUC 326-3 Classroom Management and Discipline  
EDUC 384-2,3,4,6 Special Topics\*  
EDUC 385-2,3,4,6 Special Topics\*  
EDUC 451-4 Classroom French Curriculum Practices  
EDUC 472-4 Language Arts  
EDUC 473-4 Reading\*\*  
EDUC 474-4 Social Studies  
EDUC 475-4 Mathematics  
EDUC 476-4 Natural Sciences  
EDUC 480-4 French as a Second Language  
EDUC 481-4 French Immersion and Programme-cadre de Français\*\*\*

\*courses offered in French during summer institutes

\*\*this course may be substituted with EDUC 826 if EDUC 473 has already been completed (special permission required).

\*\*\*this course may be substituted with EDUC 858 if EDUC 481 has already been completed (special permission required).

### Co-operative Education

Co-op education courses are available to those meeting the faculty's co-operative education requirements, and who want practical experience related to French studies. The program entails planned study terms and employment. See page 382 for descriptions of FREN 185, 285, 385, and 485.

### Italian Courses

Italian courses are administered by the Department of French. For courses, see "Italian ITAL" on page 408. Students with a competence in the language beyond the course in which they are enrolled will be required to withdraw. Students who are unsure of their language division are responsible for proficiency assessment prior to course enrolment. Consult the advisor or inquire at the general office.

### Certificate in Italian Studies

A minimum of 30 units comprising both lower and upper division courses is required. A maximum of six transfer units may be counted (up to six units of 100-division Italian language courses or up to six assigned transfer units in humanities, history or FPA courses or a combination thereof).

The program serves full and part-time students seeking educational enrichment in Italian Humanism from the early Renaissance to modern times. It may be completed concurrently with, and complements

major/minor programs in French, humanities, history and contemporary arts. It requires basic Italian language proficiency (writing, reading and oral skills), is intended for further literature, history and arts study, and may be completed with a degree program. Faculty of Arts and Social Sciences BA students may complete the certificate so that some of the FASS breadth requirements are fulfilled by the same courses. Certificate courses may also be used toward majors or minors.

### Program Requirements

Students complete 15 units in Italian language instruction including

ITAL 100-3 Introductory Italian I  
ITAL 101-3 Introductory Italian II  
ITAL 200-3 Intermediate Italian I  
ITAL 201-3 Intermediate Italian II  
ITAL 300-3 Advanced Italian: Language and Culture

and a minimum of 15 more units to be selected from  
ENGL 377-4 Italy Field School I  
ENGL 378-4 Italy Field School II  
FPA 337-3 Intermediate Selected Topics in Film and Video Studies\*

FPA 436-3 Advanced Seminar in Film and Video Studies\*

FREN 461-3 French Medieval Literature  
FREN 462-3 French Renaissance Literature  
HIST 402-4 Renaissance Italy  
HUM 303-4 The Latin Humanist Tradition  
HUM 305-4 Medieval Studies  
HUM 311-4 Italian Renaissance Humanism  
HUM 312W-4 Renaissance Studies  
HUM 320-4 The Humanities and Philosophy

\*providing that content of the course covers primarily Italian film and/or video

**Note:** Some of the above courses have specific prerequisites and it is the student's responsibility to ensure that all prerequisites are met for upper division courses listed in this program.

## Department of Gerontology

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www.sfu.ca/gerontology, gero@sfu.ca

### Chair

A.V. Wister HBA, MA, PhD (WOnt)

### Professor Emeritus

G.M. Gutman BA (Br Col), MA (Alta), PhD (Br Col)

### Professors

A. Sixsmith BA, MA (Keele), PhD (Lond)

A.V. Wister HBA, MA, PhD (WOnt)

### Associate Professors

H. Chaudhury BA (B'desh Engin), MSC Architecture (Texas), PhD (Wisc)

B. Mitchell BA, MA (Wat), PhD (McM)\*

N. O'Rourke HBBA (WLaur), MA (Br Col), PhD (Ott)

### Assistant Professor

L. Lovegreen BA (B Wallace), MA, PhD (Case W Reserve)

### Adjunct Professors

K. Anderson MSW, BSc (Calg)

G. Birch BASc, PhD (Br Col)

S. Crawford BHE (Br Col), MSc (Lond), PhD (S Fraser)

V. Doyle BA (Vic, BC), EdM (Harv), PhD (S Fraser)

E. Gallagher BSc Nursing (Windsor), MSc Nursing (Duke), PhD (S Fraser)

S. Hayden BA (Alta), MS, PhD (CAlbizu)

M. Hollander MSc (Br Col), PhD (Vic, BC)

H. Kennedy-Symonds BSc (Brandon), MHSc (McM), RN (Brandon)  
 S. Koehn BA, MA, PhD (Vic, BC)  
 A. Mahmood BA (Bangladesh), MSc (Missouri), PhD (Wis)  
 L. McDonald-Miszczak BA (Alta), MA, PhD (Vic, BC)  
 A. Mihailidis BSc, MSc (Tor), PhD (Strath)  
 J. Small BA (New Mexico), BA (Central Wash), PhD (Calif)  
 C. Spencer BA (Calg), LLB, LLM (Sask)  
 B. Worsfold BSW, MSW (Br Col)  
 L. Young BSN, MSN, PhD (Br Col)

#### Associate Members

R.W. Gordon, School of Criminology  
 M. Hayes, Faculty of Health Sciences  
 W. Parkhouse, Department of Biomedical Physiology and Kinesiology  
 S.N. Robinovitch, Schools of Biomedical Physiology and Kinesiology, Engineering Science

#### Advisor

Ms. A. Barrett BA (C'dia), 2800 Simon Fraser University Vancouver, 778.782.5065

\*joint appointment with sociology and anthropology

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

### Minor Program

The minor provides specialized education for those interested in combining course work in aging-related issues with an existing major program. Admission requires a minimum of 60 units with a 2.0 or higher cumulative GPA. The following prerequisite courses are recommended for entering students.

KIN 105-3 Fundamentals of Human Structure and Function  
 KIN 142-3 Introduction to Kinesiology  
 PSYC 100-3 Introduction to Psychology I  
 PSYC 102-3 Introduction to Psychology II  
 SA 150-4 Introduction to Sociology (S)  
 STAT 203-3 Statistics for the Social Sciences

Approved minor students must complete GERO 300-3 Introduction to Gerontology

plus 12 units chosen from the following  
 GERO 301-3 Research Methods in Gerontology  
 GERO 302-3 Health Promotion and Aging  
 GERO 400-4 Seminar in Applied Gerontology  
 GERO 401-3 Environment and Aging  
 GERO 402-3 Drug Issues in Gerontology  
 GERO 403-3 Counselling Issues with Older Adults  
 GERO 404-3 Health and Illness in Later Life  
 GERO 406-3 Death and Dying  
 GERO 407-3 Nutrition and Aging  
 GERO 408-4 Families over the Life course  
 GERO 409-3 Mental Health and Aging  
 GERO 410-3 Special Topics in Gerontology I  
 GERO 411-3 Special Topics in Gerontology II  
 GERO 412-3 Special Topics in Gerontology III  
 GERO 414-4 Special Topics in Gerontology IV  
 GERO 420-4 Sociology of Aging  
 GERO 435-3 Adult Guardianship law

A list of additional courses from various departments that are designated for inclusion in the minor is available. Six units maximum of designated courses may be applied toward the minor with prior advisor approval. Candidates intending to apply for admission to the post baccalaureate diploma in gerontology or to the master's program should contact the advisor before selecting courses for the minor.

### Post Baccalaureate Diploma

This program, for those with a bachelor's degree who are working or plan to work with the elderly, provides a broadly based, multidisciplinary perspective on aging as well as requisite knowledge and skills for meaningful intervention and application of research findings to practice. For information about the program's general regulations, see "Post Baccalaureate Diploma Program" on page 7.

#### Admission Requirements

- completion of a bachelor's degree from a recognized university with a minimum graduation grade point average of 2.5
- three reference letters attesting to personal qualities and characteristics, ability to complete a post baccalaureate program, and career potential and dedication to the gerontology field. Obtain an application package from the program office including letter of reference forms, program information and a separate application to the gerontology diploma program.

#### Program Requirements

Successful completion of 32 approved units, 20 of which are earned by completing the six required courses below is required. The remaining 12 units are from the specified list of optional courses.

A 2.5 CGPA is required on courses applied toward the diploma. Students entering without experience of working directly with older persons in a job or volunteer setting may be required to complete a practicum. Some organizations may require a criminal record check search prior to starting the practicum.

Visit [www.sfu.ca/gerontology](http://www.sfu.ca/gerontology) for applications.

#### Required Courses

Students complete all of  
 GERO 300-3 Introduction to Gerontology  
 GERO 301-3 Research Methods in Gerontology  
 GERO 400-4 Seminar in Applied Gerontology  
 GERO 420-4 Sociology of Aging  
 KIN 461-3 Physiological Aspects of Aging  
 PSYC 357-3 Adulthood and Aging  
 SA 420-4 Sociology of Aging

#### Optional Courses

EDUC 351-3 Teaching the Older Adult  
 GERO 302-3 Health Promotion and Aging  
 GERO 401-3 Environment and Aging  
 GERO 402-3 Drug Issues in Gerontology  
 GERO 403-3 Counselling Issues with Older Adults  
 GERO 404-3 Health and Illness in Later Life  
 GERO 406-3 Death and Dying  
 GERO 407-3 Nutrition and Aging  
 GERO 408-4 Families over the Life course  
 GERO 409-3 Mental Health and Aging  
 GERO 410-3 Special Topics in Gerontology I  
 GERO 411-3 Special Topics in Gerontology II  
 GERO 412-3 Special Topics in Gerontology III  
 GERO 414-4 Special Topics in Gerontology IV  
 GERO 435-3 Adult Guardianship Law  
 SA 319-4 Culture, Ethnicity and Aging

#### Notes:

Most diploma program courses have prerequisites and should be completed before enrolling in the program. Contact the program advisor for information on prerequisites and general program requirements.

Students should complete GERO 300 and 301 when they begin the program, and GERO 400 near the end.

Students may choose PSYC 301, SA 355 or any other approved courses in research methodology as an alternative to GERO 301; however, only one of these courses may be applied toward the diploma.

Courses other than above may be designated for gerontology diploma credit from term to term. Check with the program for listings.

## Department of History

6026A Academic Quadrangle, 778.782.3521 Tel, 778.782.5837 Fax, [www.sfu.ca/history](http://www.sfu.ca/history)

#### Chair

M. Leier BA, MA (S Fraser), PhD (Nfld)

#### Professors Emeriti

R.E. Boyer BA (Westmont), MA (Wash), PhD (Conn)  
 C.R. Day BA (Stan), MA, PhD (Harv)  
 R.K. Debo BA, MA, PhD (Nebraska)  
 M. Fellman AB (Mich), PhD (Northwestern)  
 D. Gagan BA, MA (WOnt), PhD (Duke)  
 E.R. Ingram MA (Oxf), PhD (Lond), FRHistS  
 H.J.M. Johnston BA (Tor), MA (WOnt), PhD (Lond)  
 J.M. Kitchen BA, PhD (Lond), FRHistS, FRScan  
 R.C. Newton BA (Rutgers), MA, PhD (Flor)  
 J.O. Stubbs BA (Tor), MSc (Lond), DPhil (Oxf)

#### Professors

L. Cormack BA (Calg), MA, PhD (Tor), Dean of Arts and Social Sciences  
 J.S. Craig BA, MA (Car), PhD (Camb), FRHistS  
 A. Gerolymatos BA (C'dia), MA, PhD (McG), Hellenic Canadian Congress of BC Chair in Hellenic Studies\*\*\*\*  
 M. Leier BA, MA (S Fraser), PhD (Nfld)  
 J.I. Little BA (Bishop's), MA (New Br), PhD (Ott)  
 H. Pabel BA, MA (Tor), PhD (Yale)

#### Associate Professors

A.S. Dawson BA, MA (Calg), PhD (NY State)  
 K. Ferguson BA (McG), MA, PhD (Duke)\*\*\*  
 M.E. Kelm BA, MA, PhD (Tor), Canada Research Chair  
 D.N. MacLean BA (NY State), MA, PhD (McG)  
 J. Matsumura BA (Tor), MA, PhD (York, Can)  
 A. Seager BA, MA (McG), PhD (York, Can)  
 J. Taylor BS, MA (Ore), PhD (Wash)\*

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F. Becker BA (Humboldt), MA (Lond), PhD (Camb)  
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 E. Chenier BA (York, Can), MA, PhD (Qu)  
 L. Clossey BA, MA, PhD (Calif)  
 A. Ede BA (York, Can), MA, PhD (Tor)  
 P. Garfinkel BA (Macalester), PhD (Brandeis)  
 A. Geiger BA, MA, PhD (Washington)  
 N. Kenny BA, MA (McG), PhD (Montr/Bruxelles)  
 W. Keough BEd, BA, PhD (Nfld)  
 D. Krallis BA (Athens), MA (Oxf), PhD (Mich)  
 T. Kuehn MA (Freiburg), MA (Oxf), PhD (NY)  
 E. O'Brien BA (Tor), AM, PhD (Brown)\*\*  
 R. Panchasi BA (C'dia), PhD (Rutgers)  
 N. Roth BA (Regina), MA (Calg), PhD (Tor)  
 P. Sedra BA (Prin), MA (Oxf), PhD (NY)  
 J. Spear BA (Hampshire), MA, PhD (Minn)  
 I. Vinkovetsky BA (Wesleyan, Conn), MA, PhD (Calif)

#### Advisors

Ms. J. Fraser BA (S Fraser), 6020 Academic Quadrangle, 778.782.4429

Ms. T. Wright BA (S Fraser), 6025 Academic Quadrangle, 778.782.3446

\*joint appointment with geography

\*\*joint appointment with humanities

\*\*\*joint appointment with urban studies

\*\*\*\*joint appointment with international studies

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 90.

## Major Program

### Lower Division Requirements

To enter, students must complete 18 units of 100 and 200 division history courses. One hundred and 200 division courses introduce four groupings of history course offerings: the history of the Americas; European history; the history of Africa, the Middle East, and Asia; and Global/Comparative history.

Students entering 400 division seminars should have an appropriate background in 100, 200 division and/or 300 division history. Normally, students should complete 45 units (or equivalent) prior to enrolment in any upper division history course.

Students should plan lower division work with upper division requirements in mind. The program offers a wide range of courses in four lower division groups, providing introduction to a broad curriculum. A careful selection of lower division courses lays the foundation for specialization in specific upper division areas. For this reason, complete at least one course from at least three of the four lower division courses.

#### Group 1 – Europe

HIST 106-3 The Making of Modern Europe  
HIST 215-3 The Making of the British Isles  
HIST 220-3 Late Medieval and Renaissance Europe  
HIST 223-3 Early Modern Europe, 1500-1789  
HIST 224-3 Europe from the French Revolution to the First World War  
HIST 225-3 20th Century Europe  
HIST 288-3 History of Christianity to 1500

#### Group 2 – The Americas

HIST 101-3 Canada to Confederation  
HIST 102W-3 Canada Since Confederation  
HIST 104-3 The Americas from Colonization to Independence  
HIST 201-3 The History of Western Canada  
HIST 204-3 The Social History of Canada  
HIST 208-3 Latin America: the Colonial Period  
HIST 209-3 Latin America: the National Period  
HIST 212-3 The United States to 1877  
HIST 213-3 The United States since 1877

#### Group 3 – Africa, Middle East, Asia

HIST 146-3 Africa after the Transatlantic Slave Trade  
HIST 151-3 The Modern Middle East  
HIST 205-3 Premodern Japan  
HIST 206-3 Japan Since 1868  
HIST 231-3 History of Africa to the 19th Century: From Ancient Times to the Slave Trade  
HIST 249-3 Classical Islamic Civilization  
HIST 252-3 Islamic India  
HIST 254-3 China to 1800  
HIST 255-3 China Since 1800  
HIST 256-3 The People's Republic of China

#### Group 4 – Global/Comparative

HIST 104-3 The Americas from Colonization to Independence  
HIST 130-3 Modern World History  
HIST 208-3 Latin America: the Colonial Period  
HIST 249-3 Islamic Civilization

**Note:** History majors may count one or both of WS 201 and 202 toward the required 18 lower division history units.

Students must complete at least nine lower division history units before enrolling in upper division work.

### Upper Division Requirements

Major students obtain credit in at least 32 units (eight courses) of 300 and 400 division work; 12 units (three courses) must be in 400 division courses. Courses must be distributed within all four groups. Students complete at least one course from each group. Global/Comparative courses that are also included in another group may only be counted towards fulfilling the upper division course requirement for one group.

#### Group 1 – Europe

HIST 307-4 Selected Topics in Hellenic Studies  
HIST 308-4 The Byzantine Empire  
HIST 315-4 Politics and Society in England, 1500-1707  
HIST 316-4 English Society since the Mid 18th Century  
HIST 319-4 The Modern French Nation  
HIST 320-4 European Reformation  
HIST 321-4 State and Society in Early Modern Europe  
HIST 331-4 Germany from the Reformation to 1815  
HIST 332-4 Politics and Culture in Modern Germany  
HIST 334-4 The Making of Imperial Russia  
HIST 335-4 The Soviet Project  
HIST 336-4 Absolutism and Enlightenment  
HIST 337-4 The Balance of Power in Europe  
HIST 338-4 World War II  
HIST 339-4 The British Empire and Commonwealth  
HIST 345W-4 Selected Topics in European History  
HIST 360-4 The History of Science: 1100-1725  
HIST 361-4 The History of Science: The 18th Century to the Present  
HIST 362-4 Ireland from the Penal Era to Partition  
HIST 401-4 Problems in Modern German History  
HIST 402-4 Renaissance Italy  
HIST 403-4 The European Reformation  
HIST 404-4 Protestants, Papists and Puritans: Culture and Belief in Early Modern England, 1500 – 1640  
HIST 405-4 Authority and Community in Early Modern English Society, 1500 – 1700  
HIST 407-4 Popular Culture in Great Britain and Europe  
HIST 411-4 Class and Gender in Modern Europe  
HIST 412-4 Marxism and the Writing of History  
HIST 413-4 Britain and Europe in the Twentieth Century  
HIST 414-4 The Impact of the Great War  
HIST 415-4 Victorian Britain  
HIST 416-4 The French Revolution  
HIST 417-4 Modern French Problems in History  
HIST 419-4 Problems in Modern Russian History  
HIST 420-4 Russia as a Multiethnic Empire  
HIST 421-4 Modern Greece, 1864-1925  
HIST 422-4 Greece, 1935-1944: Occupation and Resistance  
HIST 439-4 Catholicism in Early Modern Europe  
HIST 462-4 Religion, Ethnicity, and Politics in Twentieth-Century Northern Ireland

#### Group 2 – The Americas

HIST 322-4 Atlantic and Pacific Migration  
HIST 324-4 Slavery in the Americas  
HIST/FNST 325-4 History of Aboriginal Peoples of North America to 1850\*  
HIST/FNST 326-4 History of Aboriginal Peoples of North America Since 1850\*\*  
HIST 327-4 Canadian Labor and Working Class History  
HIST 329-4 Canadian Family History  
HIST 373-4 Conquest in North America, 1500-1900  
HIST 374W-4 Selected Topics in the History of the Americas  
HIST 376-4 North American West  
HIST 377-4 Environmental History  
HIST 378-4 The United States in the World since 1865  
HIST 382-4 African-American History, since 1865  
HIST 384-4 North American Urban History  
HIST 409-4 Disease and Society  
HIST 424-4 Problems in the Cultural History of Canada  
HIST 425-4 Gender and History  
HIST 426-4 State Power and Social Regulation in North America  
HIST 427-4 Problems in the History of Aboriginal Peoples

HIST 428-4 Problems in the Social and Economic History of Canada  
HIST 430-4 New France  
HIST 432-4 Problems in Environmental History  
HIST 436-4 British Columbia  
HIST 442-4 America's Empires  
HIST 444-4 Conceptualizing Atlantic Canada  
HIST 446-4 American Revolution and the Making of the Constitution  
HIST 450-4 Race, Expansion and War in the Early American Republic  
HIST 453-4 The United States in Depression and War  
HIST 454-4 The History of Sexuality  
HIST 455-4 Race in the Americas  
HIST 458-4 Problems in Latin American Regional History  
HIST 459-4 Problems in the Political and Social History of Latin America

\*only one of FNST 325 and HIST 325 can be completed for credit

\*\*only one of FNST 326 and HIST 326 can be completed for credit

#### Group 3 – Africa, Middle East, Asia

HIST 343-4 Africa and the Slave Trade  
HIST 344-4 East Africa  
HIST 348-4 A History of 20th Century South Africa  
HIST 350-4 The Ottoman Empire and Turkey  
HIST 352-4 Religion and Politics in Modern Iran  
HIST 354-4 Imperialism and Modernity in the Middle East  
HIST 355-4 The Arab Middle East in the Twentieth Century  
HIST 366-4 Social History in China since 1800  
HIST 368W-4 Selected Topics in the History of the Wider World  
HIST 371-4 The Asia Pacific War in Modern Japanese History  
HIST 388-4 Christianity and Globalization  
HIST 456-4 The Late Ottoman Empire: State, Culture and Social Transformation, 1750-1923  
HIST 457-4 The Turkish Republic: Politics, Society and Culture, 1918-present  
HIST 465-4 The Palestinian-Israeli Conflict  
HIST 466-4 Religion and Society in Africa, Nineteenth and Twentieth Century  
HIST 467-4 Modern Egypt  
HIST 468-4 Problems in the History of Religion  
HIST 469-4 Islamic Social and Intellectual History  
HIST 471-4 Women in Modern Japanese History  
HIST 472-4 Problems in World History  
HIST 473-4 The Making of South African Society  
HIST 479-4 Change, Conflict and Resistance in Twentieth-Century China

#### Group 4 – Global/Comparative

HIST 300-4 Approaches to History  
HIST 322-4 Atlantic and Pacific Migration  
HIST 334-4 The Making of Imperial Russia  
HIST 335-4 The Society Project  
HIST 373-4 North American Conquest  
HIST 376-4 North American West  
HIST 378-4 The United States in the World since 1865  
HIST 388-4 Christianity and Globalization  
HIST 412-4 Marxism and the Writing of History  
HIST 420-4 Russia as a Multiethnic Empire  
HIST 425-4 Gender and History  
HIST 442-4 America's Empires  
HIST 446-4 American Revolution in International Context  
HIST 454-4 The History of Sexuality  
HIST 466-4 Religion and Society in Africa, Nineteenth and Twentieth Century  
HIST 469-4 Islamic Social and Intellectual History  
HIST 472-4 Problems in World History  
These interdisciplinary courses below have some Canadian history content.

CNS 160-3 The Social Background of Canada

CNS 210-3 Foundations of Canadian Culture

CNS 391-3 Special Canadian Topics

CNS 490-3 Canadian Intellectual Tradition

Consult an advisor before beginning the program.

### Concentration in Middle Eastern and Islamic History

Students may qualify for this concentration by completing two of

HIST 151-3 The Modern Middle East

HIST 249-3 Classical Islamic Civilization

HIST 252-3 Islamic India

plus four of

HIST 350-4 The Ottoman Empire and Turkey

HIST 352-4 Religion and Politics in Modern Iran

HIST 354-4 Imperialism and Modernity in the Middle East

HIST 355-4 The Arab Middle East in the Twentieth Century

HIST 456-4 The Late Ottoman Empire: State, Culture and Social Transformation, 1750-1923

HIST 457-4 The Turkish Republic: Politics, Society and Culture, 1918-Present

HIST 465-4 The Palestinian-Israeli Conflict

HIST 467-4 Modern Egypt

HIST 469-4 Islamic Social and Intellectual History

### Concentration in British History and Irish History

Students may qualify for this concentration by completing

HIST 215-3 The Making of the British Isles

plus one of

HIST 315-4 Politics and Society in England, 1500-1707

HIST 316-4 English Society since the Mid 18th Century

HIST 339-4 The British Empire and Commonwealth

HIST 362-4 Ireland from the Penal Era to Partition

plus four of

ARCH 321-3 Archaeology of Britain

HIST 404-4 Protestants, Papists and Puritans: Culture and Belief in Early Modern England, 1500 – 1640

HIST 405-4 Authority and Community in Early Modern English Society, 1500 – 1700

HIST 407-4 Popular Culture in Great Britain and Europe

HIST 413-4 Britain and Europe in the Twentieth Century

HIST 415-4 Victorian Britain

HIST 462-4 Religion, Ethnicity, and Politics in Twentieth-Century Northern Ireland

### Honors Program

In intensive, small (30 student) seminars, students refine discussion skills, expository writing, and critical thought. Apply for admission to the program supervisor at the end of the fourth level. Admitted students must maintain a minimum 3.33 GPA in honors courses, and a minimum 3.0 in all other upper division courses. The three required honors courses must be completed in two or three terms in a fall/spring sequence and all other work must be completed within six terms of program admission.

Honors students must complete the following.

HIST 300-4 Approaches to History

HIST 305-4 Honors Seminar

HIST 400-4 Seminar in Historical Methods

HIST 498-6 Honors Essay

In addition to the 18 honors units, 42 upper division units are also required. Students are encouraged to complete courses outside the department but at least 50 of the 60 upper division units must be in history courses. For honors requirements, see page 89.

### History Minor Program

To enter, students must obtain at least nine units in 100 and 200 division history. Minors must obtain credit in 300 and 400 division work, totalling at least 15 or 16 units with at least four units in each division.

### Labor Studies Minor Program

Students complete 24 units comprised of nine lower division units including

LBST 101-3 Introducing Labor Studies

and 15 upper division units including

LBST 301-3 Labor Movements: Contemporary Issues and Images

The remaining electives may be from the following.

BUS 484-3 Workplace Industrial Relations

BUS 488-3 Human Relations in Business

BUEC 280-3 Introduction to Labor Economics

BUEC 384-3 Industrial Relations

BUEC 396-3 The Structure of Industry

BUEC 485-3 Collective Bargaining

CNS 280-3 Canadian Political Economy

CMNS 454-4 Computer Mediated Work and

Workplace Communication

ECON 103-4 Principles of Microeconomics

ECON 309-5 Introduction to Marxian Economics

ECON 353-4 Economic History of Canada

ECON 381-4 Labor Economics

ECON 480-3 Seminar in the Economics of Labor Market Policy

GEOG 426-4 Industrial Change and Local Development

HIST 327-4 Canadian Labor and Working Class History

HIST 412-4 Marxism and the Writing of History

HIST 424-4 Problems in the Cultural History of Canada\*

HIST 428-4 Problems in the Social and Economic History of Canada\*

HIST 453-4 The United States in Depression and War

KIN 381-3 Psychology of Work and Human Performance

KIN 382-3 Physical Hazards in the Workplace

LAS 318-4 Political Economy of Latin American Development

POL 222-3 Introduction to Canadian Politics

POL 223-3 Canadian Political Economy

POL 327-4 Globalization and the Canadian State

POL 343-4 Global Political Economy

POL 356-4 The Political Economy of Labor

POL 383-4 Political Economy of Latin America

POL 423-4 BC Government and Politics

SA 202-4 Post-Industrial Society

SA 263-4 Peasants, Proletarians and the Global Economy

SA 321-4 Social Movements

SA 328-4 Political Economy of Latin American Development

SA 340-4 Social Issues and Social Policy Analysis

SA 362-4 The Global Division of Labor

WS 308-4 Women and Work

WS 310-4 Special Topics in Women's Studies\*

WS 314-4 Race, Class and Gender Relations

\*when topic is appropriate

Students may substitute relevant special topics courses for those above with labor studies approval.

### History Extended Minor

This program consists of the lower division requirements for a major and the upper division requirements for a minor. Other criteria may be set by individual departments and programs. A student must have their program approved by the extended minor advisor. The program requires 18 units in 100 and

200 division courses and 15 or 16 units in 300 and 400 division, with at least four units in each division.

### Languages Other Than English

Although not required for a history BA, it is useful to be acquainted with a language other than English for many history courses. Students, especially those who intend to pursue graduate courses, should consider including a second language in their programs.

### History and Canadian Studies Joint Major Program

See "Joint Major Programs" on page 96.

### French, History and Politics Joint Major Program

This joint major offers study of the language, history, politics and culture of French speaking people of Canada and the world. It prepares for careers in civil service, politics (emphasizing Canadian government and politics or international relations), diplomatic service, international organizations, journalism, teaching and archival work. See page 113.

### History and Humanities Joint Major Program

See "History and Humanities Joint Major Program" on page 119.

### History and Latin American Studies Joint Major Program

See "Joint Major Programs" on page 122.

### History and Women's Studies Joint Major Program

For program requirements, see "History and Women's Studies Joint Major Program" on page 140.

### Certificate in Hellenic Studies

6219 Academic Quadrangle, 778.782.5886

The certificate, which requires 24 units, is for those with Hellenic studies interest and also for those interested in graduate Greek history. The latter should complete two language courses. Upper division prerequisite completion is the student's responsibility. Special topics courses may be completed in place of those below with advisor approval.

### Lower Division Requirements

Students complete three of

HUM 102-3 Classical Mythology

HUM 151-3 Ancient Greek I

HUM 152-3 Ancient Greek II

HUM 201-3 Great Texts in Humanities I

GRK 110-3 Modern Greek for Beginners I

GRK 160-3 Modern Greek for Beginners II 9 units

A student who successfully completes all four language courses (HUM 151, 152, LANG 110, 160) needs only three from the upper division list.

### Upper Division Requirements

Students complete four of

HIST 308-4 The Byzantine Empire

HIST 421-4 Modern Greece, 1864-1925

HIST 422-4 Greece, 1935-1944: Occupation and Resistance

HUM 302-4 The Golden Age of Greece: An Integrated Society

PHIL 350-3 Ancient Philosophy

15 or 16 units

## Certificate in Labor Studies

Students complete a minimum of 24 units including both of  
LBST 101-3 Introducing Labor Studies  
LBST 301-3 Labor Movements: Contemporary Issues and Images

The remaining electives may be chosen from the list of optional courses as shown for the Labor Studies Minor. See page 117.

## Co-operative Education

Co-operative Education combines work experience with academic studies. Students spend alternate terms on campus and in paid, study related jobs which provide practical experience in social sciences, interpretive skills and complements a history degree.

# Department of Humanities

5115 Academic Quadrangle, 778.782.3689 Tel, 778.782.4504 Fax, [www.sfu.ca/humanities](http://www.sfu.ca/humanities)

### Chair

D.C. Mirhady BA, MA (Br Col), PhD (Rutgers)

### Professors Emeriti

A. Gomez-Moriana Lic, PhD (Salamanca), MA, PhD (Mün), FRSC  
T.J. Kirschner BA (Roosevelt), MA, PhD (Chic)  
K. Mezei BA (York, Can), MA (Car), PhD (Qu)  
J.W. Walls BA, MA, PhD (Indiana)  
J. Zaslove BA (Case W Reserve), PhD (Wash)

### Professors

I. Angus BA, MA (Wat), PhD (York, Can)  
S. Duguid BA (Ill), MA, PhD (S Fraser)  
P.E. Dutton BA (WOnt), MA, PhD (Tor), MSL, MSD (Pontif Inst Tor), FRSCan, Jack and Nancy Farley Endowed University Professor in History

### Associate Professors

A.M. Feenberg-Dibon Licence d'Anglais, Diplome d'Etudes Superieures (Sorbonne), PhD (Calif)  
T. Kawasaki LLB (Doshisha), MA (Tor), PhD (Prin)\*\*  
S. Kong BA, MA (Peking), PhD (Br Col)  
D.C. Mirhady BA, MA (Br Col), PhD (Rutgers)  
E. Stebner BA (Alta), MDiv (Moravian), MA (Marquette), PhD (Northwestern), J.S. Woodsworth Chair in Humanities

### Assistant Professors

P. Crowe BA (Calg), MA, PhD (Br Col)  
S. Gandesha BA (Br Col), MA, PhD (York)  
E. O'Brien BA (Tor), MA, PhD (Brown)\*

### Adjunct Professors

Y. Grisé BA, BEd (Montr), Licence (Laval), Maîtrise, Dr3eCycle (Paris), Chev Ord Pléiade, FRSCan  
P. Kingsley MLitt (Camb), PhD (Lond)

### Associate Member

Y. Wosk, Continuing Studies

### Lecturer

C. Jones BA (Br Col), MA, PhD (McG)

### Advisor

Ms. C. Prislend, 5114 Academic Quadrangle, 778.782.4094, [prisland@sfu.ca](mailto:prisland@sfu.ca)

\*joint appointment with history

\*\*joint appointment with political science

Humanities studies a broad range of ideas and subjects drawn from philosophy, art, literature, history, religion, science, and social and political thought. Through a comparative and interdisciplinary approach to classical, medieval, renaissance, and modern culture, the study of humanities raises critical questions about achievements and controversies associated with civilization itself. Students are

encouraged to examine knowledge and ideas central to the humanities and to integrate these concerns with degree programs in original and critical ways.

The Asia-Canada Program and the graduate Liberal Studies Program are affiliated with the department. See "Asia-Canada Program" on page 93 and also see "Liberal Studies Program" on page 263.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfill writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

## Major Program

### Lower Division Requirements

Students complete 18 lower division units including HUM 101W-3 Introduction to the Humanities

and two of  
HUM 102W-3 Classical Mythology  
HUM 105-3 Western Civilization from the Ancient World to the Reformation Era  
HUM 130-3 Introduction to Religious Studies

and one of  
HUM 201-3 Great Texts in the Humanities I  
HUM 202-3 Great Texts in the Humanities II  
HUM 203-3 Great Texts in the Humanities III  
and two further lower division humanities courses.

### Upper Division Requirements

Thirty units in upper division humanities\* courses which must include

HUM 495-2 Humanities Graduating Seminar

Students are expected to include a breadth of humanities courses in fulfilling the upper division requirement. Therefore, they must consult the student advisor to plan their upper division course selection.

\*with humanities advisor prior approval, students may substitute one humanities-related upper division course from another academic unit towards the upper division humanities requirement. The same course may not be used toward more than one program (honors, joint honors, major, joint major, minor or extended minor). See the first paragraph for a definition of humanities related subjects.

## Minor Program

### Lower Division Requirements

Students complete nine lower division units including HUM 101-3 introduction to the Humanities

and one of  
HUM 201-3 Great Texts in the Humanities I  
HUM 202-3 Great Texts in the Humanities II  
HUM 203-3 Great Texts in the Humanities III

and one further humanities course.

### Upper Division Requirements

Students complete 16 units in upper division humanities courses.

## Extended Minor Program

Students may qualify for a BA with an extended minor in humanities plus one other extended minor, or may use the extended minor in combination with other programs in other degrees.

## Lower Division Requirements

Students complete the lower division requirements for the major in humanities.

## Upper Division Requirements

Students complete 16 upper division units in humanities courses.

## English and Humanities Joint Major Program

This joint major is for those interested in exploring relationships between English literature and humanities. Students must plan their program in consultation with advisors in each department.

### Lower Division Requirements

#### English

Students complete the lower division requirements of the English major program. Please see page 106.

#### Humanities

Students complete 15 units including  
HUM 101W-3 introduction to the Humanities  
and one of  
HUM 102W-3 Classical Mythology  
HUM 105-3 Western Civilization from the Ancient World to the Reformation Era  
HUM 130-3 Introduction to Religious Studies  
and one of  
HUM 201-3 Great Texts in the Humanities I  
HUM 202-3 Great Texts in the Humanities II  
HUM 203-3 Great Texts in the Humanities III  
and two further lower division humanities courses.

### Upper Division Requirements

#### English

Students complete 20 upper division English units. One course must come from ENGL 300, 304, 306, 310, 311, 313, 320, 322; and one from ENGL 354, 357, 359. Four units must be 400 division, excluding directed studies (ENGL 441, 442, 443 and 444).

#### Humanities

Students complete 22 units in upper division humanities courses which must include  
HUM 495-2 Humanities Graduating Seminar

#### Recommended

HUM 305-4 Medieval Studies  
HUM 307-4 Carolingian Civilization  
HUM 311-4 Italian Renaissance Humanism  
HUM 312W-4 Renaissance Studies  
HUM 321-4 The Humanities and Critical Thinking

## French and Humanities Joint Major Program

This inter-departmental program explores the relationship between the study of humanities and French. Interested students must plan their program in consultation with advisors in each department.

### Lower Division Requirements

#### French

Students complete the lower division requirements of the French major program. Please see page 112.

#### Humanities

Students complete 15 units including  
HUM 101W-3 introduction to the Humanities  
and one of  
HUM 102W-3 Classical Mythology  
HUM 105-3 Western Civilization from the Ancient World to the Reformation Era  
HUM 130-3 Introduction to Religious Studies  
and one of  
HUM 201-3 Great Texts in the Humanities I

HUM 202-3 Great Texts in the Humanities II  
HUM 203-3 Great Texts in the Humanities III  
and two further lower division humanities courses.

### Upper Division Requirements

#### French

Students complete  
FREN 301-3 Advanced French Composition  
and one of  
FREN 360-3 Intermediate French Literature  
FREN 370-3 Introduction to French Linguistics II

and 15 units from the 400 division French linguistics or literature offerings. FREN 461 and 462 are recommended.

#### Humanities

Students complete 22 units in upper division humanities courses which include  
HUM 495-2 Humanities Graduating Seminar

#### Recommended

HUM 307-4 Carolingian Civilization  
HUM 311-4 Italian Renaissance Humanism

### History and Humanities Joint Major Program

This joint major explores relationships between the two disciplines. Students must plan their program in consultation with advisors in each department.

### Lower Division Requirements

#### History

Students complete the lower division requirements of the history major program. Please see "Lower Division Requirements" on page 119.

#### Humanities

Students complete 15 units including  
HUM 101W-3 introduction to the Humanities  
and one of  
HUM 102W-3 Classical Mythology  
HUM 105-3 Western Civilization from the Ancient World to the Reformation Era  
HUM 130-3 Introduction to Religious Studies  
and one of  
HUM 201-3 Great Texts in the Humanities I  
HUM 202-3 Great Texts in the Humanities II  
HUM 203-3 Great Texts in the Humanities III  
and two further lower division humanities courses.

### Upper Division Requirements

#### History

Students complete 24 units of 300 and 400 division history courses, of which 12 must be in 400 division. Students complete at least two courses from any two groups, and at least one from the remaining group. For a description of the three groups, see page 116.

#### Humanities

Students complete 22 units in upper division humanities courses which must include  
HUM 495-2 Humanities Graduating Seminar  
*Recommended*  
HUM 302W-4 The Golden Age of Greece: An Integrated Society  
HUM 303-4 The Latin Humanist Tradition  
HUM 305-4 Medieval Studies  
HUM 307-4 Carolingian Civilization  
HUM 311-4 Italian Renaissance Humanism  
HUM 312W-4 Renaissance Studies

### Philosophy and Humanities Joint Major Program

This joint major explores the relationship between the two disciplines. Students must plan their program in consultation with advisors in each department.

### Lower Division Requirements

#### Humanities

Students complete 15 units including  
HUM 101W-3 introduction to the Humanities  
and one of  
HUM 102W-3 Classical Mythology  
HUM 105-3 Western Civilization from the Ancient World to the Reformation Era  
HUM 130-3 Introduction to Religious Studies

and one of  
HUM 201-3 Great Texts in the Humanities I  
HUM 202-3 Great Texts in the Humanities II  
HUM 203-3 Great Texts in the Humanities III

and two further lower division humanities courses.

#### Philosophy

Students complete 12 units including all of  
PHIL 100-3 Knowledge and Reality  
PHIL 120-3 Introduction to Moral Philosophy  
PHIL 203-3 Metaphysics  
and one of  
PHIL 150-3 History of Philosophy I  
PHIL 151-3 History of Philosophy II

### Upper Division Requirements

#### Humanities

Students complete 22 units in upper division humanities courses which include  
HUM 495-2 Humanities Graduating Seminar  
*Recommended*  
HUM 320-4 The Humanities and Philosophy  
HUM 321-4 The Humanities and Critical Thinking

#### Philosophy

Twenty-one units are required.

### Women's Studies and Humanities Joint Major Program

For requirements, see "Humanities and Women's Studies Joint Major Program" on page 140.

### Certificate in Religious Studies

This program encourages and facilitates interdisciplinary study of religious thought and its effects on civilization. Students may select courses that focus on one tradition or a broader thematic study across traditions and cultures. Courses are mainly drawn from the Departments of Humanities, History, Asia-Canada Program, and others. The program is available to those without a bachelor's degree. Credits earned may be applied to a major or minor. Units applied to one certificate may not be applied to another Simon Fraser University certificate or diploma. Students may apply for relevant transfer credit to a maximum of 15 transfer units.

### Admission Requirements

Prospective students must apply for Simon Fraser University admission and meet the normal admission requirements. Certificate program admission approval must be obtained from the department advisor.

### Program Requirements

Students complete at least 30 units, 13-14 of which are earned by completing the four required courses. The remaining units are selected from the elective list. Students are responsible for meeting the prerequisite requirements for courses used toward the certificate.

### Required Courses

(minimum of 13 units)

Students complete both of  
HUM 130-3 Introduction to Religious Studies  
HUM 330-4 Religion in Context

and two of

ARCH 226-3 The Prehistory of Religion: Shamans, Sorcerers and Saints  
HUM 204-3 Great Religious Texts  
HUM 331-4 Studies in Asian Religions  
PHIL 240-3 Philosophy of Religion

### Elective Courses

(17 units)

The remaining 17 units are chosen from the following.

ASC 202-3 Studies in Asian Cultures\*  
ASC 302-3 Selected Topics in Chinese Studies\*  
ASC 303-3 Selected Topics in Japanese Studies\*  
ASC 400-3 Selected Topics in Asia-Canada Studies\*  
HIST 220-3 Late Medieval and Renaissance Europe  
HIST 249-3 Classical Islamic Civilization  
HIST 288-3 History of Christianity to 1500  
HIST 320-4 European Reformation  
HIST 352-4 Religion and Politics in Modern Iran  
HIST 388-4 Christianity and Globalization  
HIST 404-4 Protestants, Papists and Puritans: Culture and Belief in Early Modern England 1500-1640  
HIST 439-4 Catholicism in Early Modern Europe  
HIST 466-4 Religion and Society in Africa, Nineteenth and Twentieth Centuries  
HIST 468-4 Problems in the History of Religion  
HIST 469-4 Islamic Social and Intellectual History  
HUM 102W-3 Classical Methodology  
HUM 203-3 Great Texts in the Humanities III\*  
HUM 219-3 The Early Middle Ages  
HUM 305-4 Medieval Studies \*  
HUM 307-4 Carolingian Civilization  
HUM 332-4 Mythology in Context  
HUM 350-4 Great Figures in Humanistic Tradition\*  
HUM 375-4 The Woodsworth Seminar\*  
SA 322-4 Sociology of Religion (S)  
SA 323-4 Symbol, Myth and Meaning (A)  
WS 304-4 Women and Religion  
WS 305-4 Conceiving Creativity

\*when topics are appropriate; consult with the advisor; other courses with appropriate content may be counted with prior approval of the advisor.

### Post Baccalaureate Diploma in Humanities

This program is for those who have completed a bachelor's degree. For information about the program's general regulations, see "Post Baccalaureate Diploma Program" on page 7.

### Program Requirements

Students must successfully complete an approved program comprising 30 upper division or graduate units including at least 16 HUM units. The remaining 14 are selected in consultation with an advisor in the subject or discipline which most closely fits the student's goals. Contact the humanities advisor.

### Co-operative Education

Co-op education courses are for students who meet Faculty of Arts and Social Sciences Co-operative Education Program requirements and who wish practical experience related to Humanities studies. The program entails planned study terms and employment. See the course descriptions for HUM 471, 472, 473, 474 (page 399). Work term arrangements are made through the faculty's co-op co-ordinator who should be consulted at least one term in advance. See page 212 for more details.

# School for International Studies

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## Director

J. Harriss BA, MA (Camb), PhD (E Anglia)

## Professors

J.T. Checkel BS (Cornell), PhD (MIT), Simons Chair in International Law and Human Security  
A. Gerolymatos BA (C'dia), MA, PhD (McG), Hellenic Canadian Congress of BC Chair in Hellenic Studies\*  
J. Harriss BA, MA (Camb), PhD (E Anglia)  
M.C. Howard AB (S Calif), MA (Nfld), PhD (WAust)  
P.V. Warwick BA (McM), MA, PhD (Chic)\*\*

## Associate Professors

N. Jackson BA (Tor), MSc, PhD (LSE)  
T. Moustafa BA (Calif), MA, PhD (Wash), Stephen Jarislawsky Chair in Religion and Cultural Change

## Assistant Professors

L. Nettelfield BA (Calif), MA, MPhil, PhD (Col)  
A. Pereira BA (Coimbra), MSc (Exe), PhD (S Fraser)

## Adjunct Professors

A. Mack BA (Essex)  
J. Simons BA (Antioch), MA, PhD (SFraser)  
B.T. Win BA, MA (Rangoon), PhD (Seoul), PhD (Washington)  
D.T. Yee BA, BEd, MEd (Rangoon), PhD (Washington)

## Advisor

Ms. J. Bérubé BA (S Fraser), 778.782.7906 Tel, 778.782.7837 Fax, jberubea@sfu.ca

\*joint appointment with history

\*\*joint appointment with political science

The program is primarily for students with a background or interest in political science, history, economics, geography, sociology, anthropology, and humanities, as well as other areas. Students can specialize in international issues through a curriculum which integrates training and experience concerning the complex and challenging issues that are central to global affairs. Public or private sector employees who wish to specialize in specific dimensions that are necessary to understand and address international issues may also be interested in this program.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

## Program Requirements

The school limits admission to its major based on a competitive application process. Students are eligible to apply for entry to the major after successfully completing 30 units, which must include IS 101, plus two of IS 200, 210 or 220. Application should be made in the third term week for admission in the following term. Criteria for selection are the student's CGPA and performance in IS courses.

Students must obtain a C- grade or higher in all required lower division and upper division courses used toward an international studies major, minor or honors program.

## Appeal Procedure

Applicants denied admission to the major may appeal in writing to the school's director. If that appeal results in a negative decision, a written appeal to the dean of the faculty may be submitted. Appeals will be granted only in very exceptional circumstances.

## Major Program

### Lower Division Requirements

Students complete 24 lower division units including ECON 102-3 The World Economy  
IS 101-3 Introduction to International Studies:  
Studying Global Conflict and Co-operation  
IS 240-3 Research Methods in International Studies  
plus 15 lower division units as determined by stream 1, 2, or 3 below.

### Upper Division Requirements

Students complete 32 upper division IS units including both of  
IS 450W-4 Seminar on Global Problems in Interdisciplinary Perspective  
IS 451-4 Seminar on Core Texts in International Studies

The remaining 24 units must be from one of the three streams (see "Streams" on page 120). Students must also fulfil the foreign cultural component (see "Foreign Cultural Component" on page 121).

## Honors Program

This program is for those who wish to refine their discussion skills, and their expository writing and critical thought with an international context. Apply to the program director after completion of all the lower division units and 12 upper division IS units with a minimum grade point average of 3.4. Those admitted must maintain a minimum 3.4 cumulative GPA.

For an honors degree, students complete 24 lower division units including required lower division courses for a major  
50 upper division units including all requirements for the major

plus both of  
IS 490-4 Honors Seminar  
IS 499-5 Honors Essay

The additional upper division units can be from any of the streams or foreign cultural component.

## Minor Program

### Lower Division Requirements

Students complete 12 units including both of  
ECON 102-3 The World Economy  
IS 101-3 Introduction to International Studies:  
Studying Global Conflict and Co-operation  
plus two of  
IS 200-3 Historical Perspectives on Diplomatic Relations, International Security and Law (required for students completing stream 1)  
IS 210-3 Comparative World Politics: Trajectories, Regimes, Challenges (required for students completing stream 2)  
IS 220-3 Wealth and Poverty of Nations (required for students completing stream 3)  
IS 230-3 Transnationalism and Society

### Upper Division Requirements

Students complete 16 upper division units from one of the three streams (see *Streams* below).

## Streams

Students complete upper and lower division requirements in each stream. No more than two of the required upper division courses can be fulfilled with courses from any one department, except the School for International Studies. As well, the advisor may approve selected international field school or exchange courses (see below) for credit toward a stream when the topic is appropriate. It is the student's responsibility to ensure that all prerequisites are met for upper division requirements.

### Stream 1 International Security and Conflict

#### Lower Division

Students complete  
IS 200-3 Historical Perspectives on Diplomatic Relations, International Security and Law

plus two of

IS 210-3 Comparative World Politics: Trajectories, Regimes, Challenges  
IS 220-3 Wealth and Poverty of Nations  
IS 230-3 Transnationalism and Society

plus two of

additional IS 210, 220 or 230 (whichever course is not completed to fulfil above requirement)  
GEOG 102-3 World Problems in Geographic Perspective  
HIST 130-3 Modern World History  
POL 241-3 Introduction to International Politics  
SA 203-4 Violence in War and Peace

#### Upper Division

Students complete 24 units from the following.  
IS 302-4 Introduction to Humanitarian Intervention  
IS 303-4 Ethnic Minorities, Identity Politics and Conflict in SE Asia  
IS 304-4 Russian Foreign Policies and Security Policies  
IS 311-4 Democratic Transition in Comparative Perspective  
IS 315-4 Introduction to Middle East Politics  
IS 400-4 State Building and State Failure: Comparative Perspectives  
IS 402-4 The Great Game: International Politics in Asia in Historical Perspective  
IS 403-4 Gender, Conflict and Nationalism  
IS 406-4 Selected Topics – Complex Emergencies  
IS 407-4 Selected Topics – Terrorism  
IS 408-4 Directed Readings I  
IS 409-4 Special Topics I  
IS 412-4 Central Asia, the Transcaucasus and Russia: Democracy, Development and Conflicts  
IS 452-4 Special Topics: Field School I  
HIST 338-4 World War II  
HIST 371-4 The Asia-Pacific War in Modern Japanese History  
HIST 465-4 The Palestinian-Israeli Conflict  
POL 342-4 Developing Countries in Global Politics  
POL 344-4 International Law  
POL 346-4 International Organizations  
POL 348-4 Theories of War, Peace, and Conflict Resolution  
POL 417-4 Human Rights Theories  
POL 443-4 Nuclear Strategy, Arms Control and International Security  
POL 446-4 International Relations in East Asia  
POL 448-4 Selected Topics in International Relations  
POL 449-4 Selected Topics in International Relations II  
SA 302W-4 Global Problems and the Culture of Capitalism (SA)



Students completing a major or honors must also complete

IS 450W-4 Seminar on Global Problems in Interdisciplinary Perspective

IS 451-4 Seminar on Core Texts in International Studies

## Stream 2 Comparative World Politics, Culture and Society

### Lower Division

Students complete

IS 210-3 Comparative World Politics: Trajectories, Regimes, Challenges

plus one of

IS 230-3 Transnationalism and Society

POL 231-3 Comparative Politics

plus one of

IS 200-3 Historical Perspectives on Diplomatic Relations, International Security and Law

IS 220-3 Wealth and Poverty of Nations

IS 230-3 Transnationalism and Society (if not completed to fulfil above requirement)

plus two of

additional IS 200, 220 or 230 (whichever course is not completed to fulfil above requirements)

IS 231-3 Introduction to South Asia

IS 232-3 Introduction to Southeast Asia

HIST 130-3 Modern World History

HIST 146-3 Africa after the Transatlantic Slave Trade

HIST 151-3 The Modern Middle East

HIST 206-3 Japan since 1868

HIST 209-3 Latin America: the National Period

HIST 231-3 History of Africa to the 19th Century:

From Ancient Times to the Slave Trade

HIST 255-3 China Since 1800

HIST 256-3 The People's Republic of China

LAS 100-3 Introduction to Latin American Issues

POL 241-3 Introduction to International Politics

SA 203-4 Violence in War and Peace

SA 275-4 China in Transition

WS 200-3 Women in Cross-Cultural Perspective

### Upper Division

Students complete 24 units from

GEOG 420-4 Cultural Geography

GEOG 446-4 Migration and Globalization

HIST 335-4 The Soviet Project

HIST 343-4 Africa and the Slave Trade

HIST 344-4 Themes in Modern East Africa

HIST 348-4 A History of Twentieth Century South Africa

HIST 352-4 Religion and Politics in Modern Iran

HIST 354-4 Imperialism and Modernity in the Middle East

HIST 355-4 The Arab Middle East in the Twentieth Century

HIST 368W-4 Selected Topics in the History of the Wider World

HIST 388-4 Christianity and Globalization

HIST 420-4 Russia as a Multiethnic Empire

HIST 421-4 Modern Greece, 1864-1925

HIST 457-4 The Turkish Republic: Politics, Society, and Culture, 1918-present

HIST 465-4 The Palestinian-Israeli Conflict

HIST 467-4 Modern Egypt

HIST 472-4 Problems in World History

HIST 473-4 The Making of South African Society

HIST 479-4 Change, Conflict and Resistance in Twentieth Century China

IS 311-4 Democratic Transition in Comparative Perspective

IS 312-4 Europe: Undivided but Plural

IS 313W-4 Nationalism, Democracy and

Development in Modern India

IS 314-4 National, Regional, and International Politics in Southeast Asia

IS 315-4 Introduction to Middle East Politics

IS 410-4 Politics, Institutions and Development

IS 412-4 Central Asia, the Transcaucasus and Russia: Democracy, Development and Conflicts

IS 418-4 Directed Readings II

IS 419-4 Selected Topics II

IS 452-4 Special Topics: Field School I

ISPO 337-4 Comparative Politics of Latin America

ISPO 450-4 Globalization and Regional Politics in Latin America

ISPO 450W-4 Globalization and Regional Politics in Latin America

ISPO 450-4 Globalization and Regional Politics in Latin America

ISPO 450W-4 Globalization and Regional Politics in Latin America

ISPO 483 Political Economy of Latin American Development

POL 335-4 Government and Politics: People's Republic of China

POL 339-4 Selected Topics in Comparative Government and Politics

POL 374-4 Africa in the Global Political Economy

POL 381-4 Japanese Politics

POL 431-4 Comparative Western European Systems

POL 432-4 Comparative Communist and

Post-Communist Political Systems

POL 436-4 Elections, Parties, and Governments in Comparative Perspectives

POL 438-4 Selected Topics in Comparative

Government and Politics I

POL 439-4 Selected Topics in Comparative

Government and Politics II

POL 440-4 Special Topics: Latin American

International Relations

POL 448-4 Selected Topics in International Relations

POL 449-4 Selected Topics in International Relations II

POL 481-4 Identity Politics

SA 302W-4 Global Problems and the Culture of Capitalism (SA)

SA 321-4 Social Movements

SA 362-4 Society and the Changing Global Division of Labor (S)

SA 388-4 Comparative Studies of Minority Indigenous Peoples

SA 392-4 Latin America

SA 396-4 Selected Regional Areas

SA 418-4 International Health: Global Policies and Local Realities (SA)

SA 430-4 States, Cultures and Global Transitions (SA)

WS 312-4 Immigrants, Women and Transnational Migration

Students completing a major or honors must also complete

IS 450W-4 Seminar on Global Problems in

Interdisciplinary Perspective

IS 451-4 Seminar on Core Texts in International Studies

## Stream 3 International Development, Economic, and Environmental Issues

### Lower Division

Students complete both of

ECON 105-4 Principles of Macroeconomics

IS 220-3 Wealth and Poverty of Nations

plus three of

ECON 103-4 Principles of Microeconomics

GEOG 221-3 Economic Geography

IS 200-3 Historical Perspectives on Diplomatic

Relations, International Security and Law

IS 210-3 Comparative World Politics: Trajectories, Regimes, and Challenges

IS 230-3 Transnationalism and Society

### Upper Division

Students complete 24 units from the following.

ECON 342-3 International Trade

ECON 345-3 International Finance

ECON 355W-4 Economic Development

ECON 362-4 Economics of Natural Resources

ECON 443-3 Seminar in International Trade

ECON 446-3 Seminar in International Finance

ECON 455W-3 Seminar in Economic Development

GEOG 312-4 Geography of Natural Hazards

GEOG 322-4 World Resources

GEOG 327-4 Geography of Tourism

GEOG 382-4 Population Geography

GEOG 389W-4 Nature and Society

GEOG 422-4 Theories and Practices of Development

GEOG 428-4 World Forests

GEOG 429-4 Environment and Inequality

GEOG 446-4 Migration and Globalization

GEOG 466-4 Latin American Regional Development

GEOG 468-4 Society and Environment in China

IS 315-4 Introduction to Middle East Politics

IS 320-4 Selected Problems in the International Economy

IS 421-4 The Economics of International Organizations and Development

IS 427-4 Selected Topics – Globalization, Poverty and Inequality

IS 428-4 Directed Readings III

IS 429-4 Special Topics III

IS 452-4 Special Topics: Field School I

ISPO 450-4 Globalization and Regional Politics in Latin America

ISPO 450W-4 Globalization and Regional Politics in Latin America

POL 374-4 Africa in the Global Political Economy

POL 442-4 The Political Economy of International Trade

POL 453-4 The Political Economy of Cities and City Regions

SA 316-4 Tourism and Social Policy

WS 309-4 Gender and International Development

Students completing a major or honors must also complete

IS 450W-4 Seminar on Global Problems in Interdisciplinary Perspective

IS 451-4 Seminar on Core Texts in International Studies

## Foreign Cultural Component

### Language Proficiency

An acquaintance with a language other than English is required. Those without this requirement should complete language courses either at the Language Training Institute (page 126) or the Department of French (page 111). Demonstrated proficiency in a second language will consist of one of the following.

- the equivalent of two 200 division courses within the same language in a Simon Fraser University language program (either through completion of courses, course challenge, or placement tests)
- completion of high school equivalence in a language other than English in a foreign country.\*
- completion of high school in a francophone educational system within Canada (i.e. French immersion or in a Francophone province).\*

\* the School for International Studies will require a copy of the high school transcript, officially translated where necessary.

### Language Courses

See CHIN, FREN, GERM, GRK, ITAL, JAPN, SPAN in the *Course Index* section of this Calendar.

### Study Abroad Programs

This program requires some study abroad as part of the undergraduate education, preferably in the third or fourth years. Such study can be counted toward the elective requirements with the approval of the program, for example, through

- field schools (see “Field Schools” on page 215)
- short-term foreign visits. Opportunities for international conferences, colloquia and research are available through the program.
- co-op education internship. Students work in a foreign country for an overseas organization or a Canadian affiliate. Other work experience includes employment through the Department of Foreign Affairs under its internships programs including Global Issues, International Trade, and Value and Culture. Students in good standing with a minimum 3.0 GPA may apply to co-op after satisfactory completing 45 units. The program consists of two separate work terms in a foreign relations field. Arrangements are made with the Faculty of Arts and Social Sciences co-op advisor.

## International Field School and Exchange Courses

The following are available in approved Simon Fraser University field schools or as transfer credit when completed abroad in an exchange program. When topics are appropriate, these courses may be applied to international studies module requirements. See the program advisor for course approval procedures.

IS 452-4 Special Topics – Field School I  
LAS 402-5 Field Study  
LAS 404-3 Special Topics: Field School I

## Latin American Studies Program

5054 Academic Quadrangle, 778.782.3146 Tel,  
778.782.5799 Fax, [www.sfu.ca/las](http://www.sfu.ca/las)

### Director

E. Hershberg BA (Indiana), MA, PhD (Wis)

### Professor Emeritus

R.E. Boyer BA (Westmount), MA (Wash), PhD (Conn)  
J. Garcia Prof Lit (Peru), MA (Alta), DoctCert (Madr)  
R.C. Newton BA (Rutgers), MA, PhD (Flor)  
P. Wagner AB, MA, PhD (Calif)

### Associate Members

Y. Atasoy, Department of Sociology and Anthropology  
J. Brohman, Department of Geography  
A. Clapp, Department of Geography  
K. Corbett, Faculty of Health Sciences  
A. Dawson, Department of History  
F. de Maio, Department of Sociology and Anthropology  
A. Hira, Department of Political Science  
R.W. Jamieson, Department of Archaeology  
G. Otero, Department of Sociology and Anthropology  
S. Pigg, Department of Sociology and Anthropology  
J. Sousa, Department of Linguistics  
H. Wittman, Department of Sociology and Anthropology  
H. Zaman, Department of Women's Studies

### Advisor

Ms. K. Payne, 5055 Academic Quadrangle,  
778.782.3726

This program offers a minor, extended minor, and nine joint majors in Latin American studies in association with nine disciplinary programs. The multidisciplinary perspective focuses on historical and contemporary development issues, with solid grounding in one joint discipline, providing a sound background in teaching, journalism, travel, community relations, law, diplomacy, government, international trade, and international development projects, and for advanced scholarly work. Important components are the multidisciplinary field school in Latin America, and exchange programs with top Latin American universities. Students must consult regularly with the advisor regarding course selection.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See “Writing, Quantitative, and Breadth Requirements” on page 7 for information. For the faculty's requirements, see “Writing, Quantitative, and Breadth Requirements” on page 88.

## Minor Program

The Latin American Studies Program offers students the maximum opportunity to integrate understanding of Latin America and its relationship with Canada, the Pacific Rim, and the world.

## Language Requirements

The following courses or equivalents are required.  
SPAN 102-3 Introductory Spanish I  
SPAN 103-3 Introductory Spanish II

Although all courses are taught in English, students must demonstrate a reading knowledge of Spanish (the equivalent of two college level courses) or Portuguese or, in exceptional circumstances, French. This is a recommended skill for upper division courses that frequently require independent investigation of specialized topics.

## Lower Division Requirements

Students complete 12 units including  
LAS 100-3 Introduction to Latin American Issues

and two of  
ARCH 273-3 Archaeology of the New World  
HIST 208-3 Latin America: The Colonial Period  
HIST 209-3 Latin America: The National Period

and one of  
BUS 130-3 Business in the Networked Economy I  
CMNS 110-3 Introduction to Communication Studies  
CMNS 130-3 Explorations in Mass Communication  
ECON 102-3 The World Economy  
ECON 110-3 Foundations of Economic Ideas  
GEOG 100-3 Human Geography  
GEOG 111-3 Earth Systems  
POL 100-4 Introduction to Politics and Government  
REM 100-3 Global Change  
SA 101-4 Introduction to Anthropology  
SA 150-4 Introduction to Sociology

## Upper Division Requirements

Students complete 15 upper division units of courses with Latin American focus.

## Extended Minor Program

This program consists of the lower division requirements for a joint major, including language requirements, and the upper division requirements for a minor. Students' programs must be approved by the advisor of the program.

## Joint Major Programs

Joint majors are available with the Departments of Archaeology, Economics, Geography, History, Political Science, Sociology and Anthropology, the School of Communication and the Faculty of Business Administration. The joint major combines selected disciplines leading to a BA or a BBA.

Courses used toward the upper division Latin American development studies requirements may not be used as part of the other discipline's requirements, or vice versa. Any lower division course that counts toward the separate Latin American development studies requirements and the other subject may count towards both. Joint majors complete all the courses listed for the discipline in which they are pursuing the other major. During the last year of their Latin

American development studies joint major, students complete LAS 498 to complete a capstone project which is written according to the standards of their disciplinary joint major, and will generally be of approximately six to eight thousand words. Students must satisfy the prerequisites of all required lower and upper division courses, and should consult regularly with the program advisor regarding course selection.

## Language Requirements

The following courses or equivalents are required.

SPAN 102-3 Introductory Spanish I  
SPAN 103-3 Introductory Spanish II  
SPAN 201-3 Intermediate Spanish I  
SPAN 202-3 Intermediate Spanish II

## Latin American Studies Requirements Lower Division Requirements

A minimum of 12 units is required including  
LAS 100-3 Introduction to Latin American Issues

and two of  
ARCH 273-3 Archaeology of the New World  
HIST 208-3 Latin America: The Colonial Period  
HIST 209-3 Latin America: The National Period

and one of  
BUS 130-3 Business in the Networked Economy I  
CMNS 110-3 Introduction to Communication Studies  
CMNS 130-3 Explorations in Mass Communication  
ECON 102-3 The World Economy  
ECON 110-3 Foundations of Economic Ideas  
GEOG 100-3 Human Geography  
GEOG 111-3 Earth Systems  
POL 100-4 Introduction to Politics and Government  
REM 100-3 Global Change  
SA 101-4 Introduction to Anthropology  
SA 150-4 Introduction to Sociology

## Upper Division Requirements

A minimum of 40 upper division units is required, with at least 20 in upper division units with primary or substantial Latin American studies focus, including LAS 498-5 Capstone Project

and 20-32 upper division units in the joint discipline selected, as specified below.

## Other Discipline Requirements

To satisfy the requirements of the other joint major discipline, students must complete 20-32 units, as indicated below for the specific discipline.

### Anthropology

Students complete 20 units in upper division anthropology courses and must fulfil the anthropology major program's theory and methods requirements. See “Sociology or Anthropology and Latin American Studies Joint Major Program” on page 136.

### Archaeology

Students complete 20 units in archaeology in the 300 and 400 division.

### Business Administration

See “Business Administration and Latin American Studies Joint Major Program” on page 147.

### Communication

Students complete 26 communication upper division units, including  
CMNS 347-4 Communication in Conflict and Intervention  
CMNS 362-6 Evaluation Methods for Applied Communication Research  
CMNS 446-4 The Communication of Science and the Transfer of Technology

and also the faculty requirements of applied sciences or arts, depending on the desired degree: bachelor of arts (Faculty of Applied Sciences) or bachelor of arts (Faculty of Arts and Social Sciences).

## Economics

Students complete the lower division requirements as specified for the economics major program (see "Major Program" on page 105). In addition, students complete 25 upper division units including BUEC 333-4 Statistical Analysis of Economic Data ECON 301-4 Microeconomic Theory I: Competitive Behavior ECON 302-4 Microeconomic Theory II: Strategic Behavior ECON 305-5 Intermediate Macroeconomic Theory and at least one 400 division ECON or BUEC course (excluding ECON 431, 435, BUEC 433 and 485).

### Group Requirements

To meet the Department of Economics group requirements for the economics major program, students must include at least one course from the economics group requirements. For information, see "Group Requirements" on page 105.

## Geography

Students complete 20 geography units including a minimum of eight 400 division units, at least one of which should include Latin American content.

## History

Students complete 24 units of 300 and 400 division history courses, of which 12 units must be in 400 division courses. Students complete at least two courses from any two groups, and at least one from the remaining group. For a description of the three groups, see "Major Program" on page 116.

## Political Science

Students complete 32 units in upper division political science, as required for political science majors. (POL 337 may not be used to satisfy LAS requirements.)

## Sociology

Students complete 20 units in upper division sociology courses and must fulfil the sociology major program's theory and methods requirements. See "Sociology or Anthropology and Latin American Studies Joint Major Program" on page 136

## Courses with Primary Latin American Focus\*

Students may complete any of the following courses to fulfil LAS requirements. Others may be offered in addition to those below. Consult the advisor for a complete list each term.

ARCH 273-3 Archaeology of the New World  
ARCH 330-3 Prehistory of Latin America  
GEOG 466-4 Latin American Regional Development  
HIST 208-3 Latin America: The Colonial Period  
HIST 209-3 Latin America: The National Period  
HIST 458-4 Problems in Latin American Regional History  
HIST 459-4 Problems in the Political and Social History of Latin America  
LAS 200-3 Introduction to Latin American Issues  
LAS 300-3 Latin American Literature  
LAS 312-3 Special Topics: Latin American Cultural Topics  
LAS 404-3 Special Topics: Field School I  
LAS 405-3 Special Topics: Field School II  
LAS 493-3 Directed Readings  
LAS 498-5 Capstone Project  
POL 320-4 Canada-Latin America  
POL 337-4 Government and Politics: Selected Latin American Nations I  
POL 440-4 Latin American International Relations  
POL 450-4 Globalization and Regional Politics in Latin America  
POL 483-4 Political Economy of Latin American Development  
SA 392-4 Latin America  
SA 403-4 Special Topics: Latin American Economy and Society

SA 404-4 Andean Society and Culture  
WS 323-4 Women in Latin American Literature and Society

\*students may use other courses with primary Latin American content to fulfil Latin American course requirements with approval of the program advisor

## Courses with Substantial Latin American Focus

Courses in which Latin America is substantially emphasized may fulfil LAS joint major requirements. Students should review the department's course outlines and consult the Latin American studies advisor for permission to complete these courses.

A special topics course to be completed for Latin American studies credit should approved by the instructor and the program advisor.

CMNS 347-4 Communication in Conflict and Intervention  
CMNS 444-4 Political Economy of International Communication  
CMNS 446-4 The Communication of Science and Transfer of Technology  
ECON 355-4 Economic Development  
ECON 362-4 Economics of Natural Resources  
GEOG 322-3 World Resources  
GEOG 422-4 Theories and Practices of Development  
GEOG 428-4 World Forests  
HIST 104-3 History of the Americas to 1763  
HIST 299-3 Problems in History  
HIST 324-4 Slavery in the Americas  
POL 342-4 Relations Between Developed and Developing Nations  
POL 345-4 The Nation-State and the Multinational Corporation  
POL 433-4 Comparative Developing Systems  
SA 388-4 Comparative Studies of Minority Indigenous Peoples  
SA 429-4 Sex, Work and International Capital  
WS 200-3 Women in Cross-Cultural Perspective  
WS 309-4 Gender and Development

## Field School

The field school is a full term in Latin America. Students gain, through direct experience, a deeper insight into the cultural, political, and economic issues of Latin American development. One faculty member and up to 20 students travel every second year to a selected location.

## Co-operative Education

For admission, 30 units with a minimum 2.75 CGPA is required. Prior to admission, students should complete LAS 200, two other lower division courses and SPAN 102. Transfer students complete at least 15 Simon Fraser University units. (See page 212). Work term arrangements are made through the faculty's co-op co-ordinator who should be consulted at least one term in advance.

## Department of Linguistics

9201 Robert C. Brown Hall,  
778.782.4585 Tel, 778.782.5659 Fax,  
lingdept@sfu.ca, www.sfu.ca/linguistics

### Chair

T.A. Perry BA (Wabash), MA, PhD (Indiana)

### Professors Emeriti

F.J. Pelletier BS, MA (Nebraska), MSc, MSc (Alta), PhD (Calif), Canada Research Chair  
E.W. Roberts BA (Wales), MA, PhD (Camb)

### Professors

D.B. Gerds BA (Missouri), MA (Br Col), PhD (Calif)  
M. Munro BEd, MSc, PhD (Alta)

### Associate Professors

E.J. Fee BA, MA, PhD (Br Col)  
C.H. Han BA (Ewha), MA, PhD (Penn)  
N. Hedberg BA, PhD (Minn)  
T. Heift I and II Staatsexamen (Weingarten), MA, PhD (S Fraser)  
S.K. Hilgendorf BA (Calif State), MA, PhD (Ill)  
P. McFetridge BA, MA, PhD (S Fraser), Associate Dean of Arts and Social Sciences  
Z. McRobbie UDipl, Dipl, PhD (Eötvös Loránd, Budapest), PhD (Manit)  
J.D. Mellow BA (Calg), MA (McG), PhD (Br Col)  
T.A. Perry BA (Wabash), MA, PhD (Indiana)  
J.M. Sosa ProfLit&Ling (Venezuela Central), MA (Lond), PhD (Mass)  
M. Taboada BA, MA (Complutense, Madrid), MSc (Carnegie-Mellon), PhD (Complutense, Madrid)

### Assistant Professors

J. Alderete BA, MA (Calif), PhD (Mass)  
P. Pappas BA (St John's, Maryland), PhD (Ohio State)  
Y. Wang BA, MA (NTNU), MA, PhD (Cornell)

### Adjunct Professors

F.J. Newmeyer BA, MA (Roch), PhD (Ill)  
K. Shahin BA, MA (Vic, BC), PhD (Br Col)

### Senior Lecturers

C. Burgess BA, MA, PhD (S Fraser), LLB (Br Col)  
M. Escudero BA, MA (S Fraser), PhD (Br Col)  
S. Fleming BA (Br Col), MA (S Fraser)  
I. Galloway BA, MA (Manc), MA (C'dia)  
B. Ng BA (Intl Christian, Japan), MA (Lond)  
N. Omae MA (Osaka), MPhil (Exe)  
L. Zuccolo BA (Arg), MA (S Fraser)

### Lecturers

S.M. Russell BA (Br Col), MA (S Fraser)  
M. Sevier BA (Wash), MA (California State)

### Faculty Associated with the Program

M. Boelscher Ignace, First Nations Studies Program,  
Department of Sociology and Anthropology  
F. Popowich, School of Computing Science

### Advisors

Ms. L. Jung BA (S Fraser), 8109 Robert C. Hall, (for Language Training Institute, certificate in Spanish language, and certificate in German studies advising only), 778.782.4790, lj@sfu.ca

Ms. R. Parmar BA (S Fraser), 9200 Robert C. Brown Hall, 778.782.5739, parmar@sfu.ca

Ms. L. Yam BA (S Fraser), certificate in First Nations language proficiency, and joint major in First Nations studies and linguistics advisor, 9089 Arts and Social Sciences Complex 1, 778.782.5595, first\_nations@sfu.ca

The Department of Linguistics offers honors, major, extended minor and minor programs in linguistics and participates in the cognitive science program.

Program requirements for the honors, major, extended minor and minor programs are listed below. Students pursuing linguistics should seek advice early in their programs. General course descriptions are given in *Undergraduate Courses*.

## Courses of Interest to Students Outside the Department

These general interest courses give insight into language and linguistics, and have no prerequisites.

LING 100-3 Communication and Language  
LING 110-3 The Wonder of Words  
LING 160-3 Language, Culture, and Society  
LING 200-3 Introduction to the Description of English Grammar  
LING 220-3 Introduction to Linguistics

LING 290-3 The Science of Speech  
LING 295-3 Language and the Law

The following courses have no prerequisites and may interest those with particular language specialties (when they focus on the language of their interest).

LING 231-3 Introduction to a First Nations Language I  
LING 232-3 Introduction to a First Nations Language II  
LING 431-3 Language Structures I  
LING 432-3 Language Structures II

The selected focus languages for these courses are shown in the *Undergraduate Schedule of Classes and Examinations*.

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements. See “Writing, Quantitative, and Breadth Requirements” on page 7. For the faculty’s requirements, see “Writing, Quantitative, and Breadth Requirements” on page 88.

### Major Program

An overall 2.25 cumulative GPA and a minimum C grade in LING 220 is required for admission to the major and all joint major programs.

#### Lower Division Requirements

Students complete all of  
LING 220-3 Introduction to Linguistics  
LING 221-3 Introduction to Phonetics and Phonology  
LING 222-3 Introduction to Syntax  
plus six additional lower division linguistics units.

#### Upper Division Requirements

Students complete both of  
LING 321-3 Phonology  
LING 322-3 Syntax  
plus one of  
LING 301W-3 Linguistic Argumentation  
LING 309W-3 Sociolinguistics

plus any two of  
LING 323-3 Morphology  
LING 324-3 Semantics  
LING 330-3 Phonetics  
plus 15 additional upper division linguistics units.

### Honors Program

An overall cumulative GPA of 3.0 and a minimum C grade in LING 220 is required for admission.

#### Lower Division Requirements

Students complete all of  
LING 220-3 Introduction to Linguistics  
LING 221-3 Introduction to Phonetics and Phonology  
LING 222-3 Introduction to Syntax  
plus six additional lower division linguistics units.

#### Upper Division Requirements

Students complete all of  
LING 321-3 Phonology  
LING 322-3 Syntax  
LING 490-3 Honors Essay  
plus one of  
LING 301W-3 Linguistic Argumentation  
LING 309W-3 Sociolinguistics

plus any two of  
LING 323-3 Morphology  
LING 324-3 Semantics  
LING 330-3 Phonetics  
plus 33 additional upper division linguistics units.

### Minor Program

A cumulative GPA of 2.00 and a minimum C grade in LING 220 is required for admission.

#### Lower Division Requirements

Students complete  
LING 220-3 Introduction to Linguistics  
plus 12 additional units in lower division linguistics

#### Upper Division Requirements

Students complete 15 upper division linguistics units.

**Note:** General course descriptions are given in the *Undergraduate Courses* section (page 123).

### Extended Minor Program

An extended minor consists of the lower division requirements for a major and the upper division requirements for a minor. Certain other criteria may be set by individual departments and programs. A student must have their program approved by the advisor for the extended minor program.

### Computing Science and Linguistics Joint Major Program

See “Computing Science and Linguistics Joint Major Program” on page 80.

### First Nations Studies and Linguistics Joint Major Program

See “First Nations Studies and Linguistics Joint Major Program” on page 109.

### Linguistics and Anthropology Joint Major Program

An overall cumulative GPA of 2.25 and a minimum C grade in LING 220 is required for admission.

Linguistics and anthropology are kindred disciplines, each concerned with culture, cognition and social relations. Students will acquire multidisciplinary expertise in anthropological aspects of language.

The joint major is of special interest to those pursuing the certificate in First Nations language proficiency or the certificate in native studies research, as well as to students interested in the anthropology of language, anthropological linguistics, or cognitive science.

#### Lower Division Requirements

##### Anthropology

Students complete all of  
SA 101-4 Introduction to Anthropology (A)  
SA 201W-4 Anthropology and Contemporary Life (A)  
SA 255-4 Introduction to Social Research (S or A)  
plus two additional 200 division courses in anthropology and/or sociology.

##### Linguistics

Students complete  
LING 220-3 Introduction to Linguistics  
plus one of  
LING 130-3 Practical Phonetics  
LING 221-3 Introduction to Phonetics and Phonology  
plus one of  
LING 160-3 Language, Culture, and Society  
LING 241-3 Languages of the World  
plus six additional units in 100 and 200 division LING courses. Note that LING 222 is required for many upper division courses.

### Upper Division Requirements

#### Anthropology

Students complete both of  
SA 301-4 Contemporary Ethnography (A)  
SA 356W-4 Ethnography and Qualitative Methods (S or A)

plus 12 additional upper division units chosen from the Calendar list of anthropology (A), or (S or A) courses when they are designated as anthropology.

#### Linguistics

Students complete three of  
LING 321-3 Phonology  
LING 322-3 Syntax  
LING 323-3 Morphology  
LING 324-3 Semantics  
LING 330-3 Phonetics  
LING 331-3 Description and Analysis of a First Nations Language I

plus one of  
LING 309W-3 Sociolinguistics  
LING 332-3 Description and Analysis of a First Nations Language II  
LING 408-3 Field Linguistics

plus nine additional upper division LING units. The following courses are recommended.

LING 407-3 Historical Linguistics  
LING 430-3 Native American Languages  
LING 441-3 Linguistic Universals and Typology

### Certificate in First Nations Language Proficiency

This program is for students who wish to acquire conversational and literacy skills in a particular First Nations language, to teach this language in schools, or to enhance their language for cultural reasons or professional objectives.

The certificate consists of 27 units. At least 12 must be earned by completing courses in the First Nations language itself. The certificate can be completed on a full or part time basis. Advanced placement through course challenge to a maximum of nine units is possible for fluent speakers. Credit may be applied to a specific language and is achieved by examination from an instructor in that language with the approval of the department.

#### Program Requirements

Students complete or achieve equivalent credit for the following.

LING 130-3 Practical Phonetics  
LING 220-3 Introduction to Linguistics  
LING 231-3 Introduction to a First Nations Language I\*  
LING 232-3 Introduction to a First Nations Language II\*  
LING 331-3 Description and Analysis of a First Nations Language\*  
LING 332-3 Description and Analysis of a First Nations Language II\*

In addition, students must complete at least nine units selected from the following courses.

LING 160-3 Language, Culture and Society  
LING 241-3 Languages of the World  
LING 280-3 First Nations Language Immersion  
LING 335-3 Topics in First Nations Language I  
LING 360-3 Linguistics and Language Teaching  
LING 430-3 Native American Languages  
LING 431-3 Language Structures I\*  
LING 432-3 Language Structures II\*  
LING 433-3 First Nations Language Mentoring I\*  
LING 434-3 First Nations Language Mentoring II\*  
LING 435-3 Topics in First Nations Language II

\*may be used if the subject matter is the same First Nations language

## Certificate in German Studies

This program serves both full and part time students, and those seeking educational enrichment in areas related to the establishment and evolution of German humanism from the Reformation to modern times. The certificate may be completed concurrently with, and complements, major and minor programs in areas such as history, humanities, philosophy and political science.

The program requires basic proficiency in the German language (writing, reading, listening and speaking), and is intended for students who wish to pursue further studies in literature, history, philosophy and political science, and may be completed in conjunction with a degree program. Those students planning to obtain a bachelor of arts within the Faculty of Arts and Social Sciences (FASS) may complete the certificate in such a way that some of the FASS breadth requirements are fulfilled by the same courses. Courses used toward the certificate may also be used toward a major and minor.

This program requires a minimum of 21 units as stipulated below.

### Course Requirements

Students complete four German language courses including all of

GERM 102-3 Introductory German I  
GERM 103-3 Introductory German II  
GERM 201-3 Intermediate German I

and a minimum of three courses selected from the following list, or other courses with the approval of the Language Training Institute.

ENGL 392-4 Studies in World Literatures in English\*  
FPA 137-3 The History and Aesthetics of Cinema II\*  
FPA 337-3 Intermediate Selected Topics in Film and Video Studies\*  
HIST 224-3 Europe from the French Revolution to the First World War  
HIST 225-3 20th Century Europe  
HIST 332-4 Politics and Culture in Modern Germany  
HIST 337-4 The Balance of Power in Europe  
HIST 338-4 World War II  
HIST 401-4 Problems in Modern German History  
HIST 412-4 Marxism and the Writing of History  
HIST 414-4 The Impact of the Great War  
HUM 240-3 Studies in Modern European Culture\*  
HUM 307-4 Carolingian Civilization  
HUM 340-4 Great Cities in Their Time\*  
HUM 350-4 Great Figures in Humanistic Tradition\*  
PHIL 151-3 History of Philosophy II  
PHIL 280-3 Introduction to Existentialism  
PHIL 451-4 Kant  
POL 348-4 Theories of War, Peace and conflict Resolution\*  
POL 444-4 Politics and Foreign Policy of the European Union

\*may be used if the subject is primarily Germany and its people (literature, film and/or video, great historical figures, etc.); requires program director's approval

**Note:** it is the student's responsibility to ensure that all prerequisites are met

### Transfer Credit

A maximum of six transfer credit units of 100 division language courses (only GERM 102 and 103) may be used toward this certificate.

### Course Challenge Credit

A maximum of six units of 100 division language courses (only GERM 102 and 103) may be challenged for credit for this certificate.

## Certificate in Teaching ESL Linguistics

This certificate is for students seeking a basic introduction to principles and theory underlying current approaches to the teaching of English as a second language (TESL). The program emphasizes an understanding of linguistics and applied linguistics concepts. Successful completion of a 30 hour practicum in an adult ESL program is also required. The certificate requires at least four to five terms to complete and may be earned concurrently with an honors, major, extended minor or minor in linguistics.

While the certificate by itself is not a specific employment credential, it constitutes basic preparation for teaching English language skills to adult learners. The certificate also provides preparation for further applied linguistics and TESL studies. Those pursuing a long-term TESL career should plan to complete more advanced studies upon completion of the program. Monolingual students are strongly advised to complete at least two courses (six units) in a language other than English.

### Admission Requirements

Admission is not automatic. All candidates must complete and submit the required application form (available from the department) with a statement of purpose and all other required documents prior to one of three deadlines (September 30, January 31, May 31). An interview with a designated studies upon completion of the program. Monolingual students are strongly advised to complete at least two courses (six units) in a language other than English.

Prospective students may begin completing certificate courses prior to program admission. However, students are strongly advised to apply as soon as possible after completing LING 200, 220 and an upper division course, preferably in linguistics, with a minimum C- grade. Those who delay may be unable to enrol in the required courses at the desired time.

In addition to the University's admission requirements, students must demonstrate excellent spoken and written English. This requirement is more stringent than the University's minimum English language requirement. Students whose first language is not English should consult the department well in advance of applying. Oral communication skills will be assessed during the interview.

Applications are evaluated on merit. The department considers academic standing, communication skills as assessed in the interview, interests and motivations in the statement of purpose, and personal qualities. Priority is given to those enrolled in a Simon Fraser University degree program.

### Program Requirements

The program requires successful completion of 31 units as set out below, with a minimum 2.00 GPA calculated on grades in the specified required courses. Students also must complete a supervised practicum (LING 363) which includes 25 to 30 units of experience in an adult ESL classroom.

#### Lower Division

##### Required courses

Students complete all of  
LING 110-3 The Wonder of Words  
LING 200-3 Introduction to the Description of English Grammar  
LING 220-3 Introduction to Linguistics  
LING 221-3 Introduction to Phonetics and Phonology  
12 units

plus two of  
EDUC 220-3 Introduction to Educational Psychology  
LING 100-3 Communication and Language  
LING 160-3 Language, Culture, and Society  
LING 241-3 Languages of the World  
6 units

#### Upper Division

##### Required courses

Students complete all of  
EDUC 467-4 Curriculum and Instruction in Teaching English as an Additional Language  
LING 360-3 Linguistics and Language Teaching  
LING 362-3 English as a Second Language: Theory  
LING 363-3 English as a Second Language: Practice  
13 units

##### Recommended Courses

EDUC 468-4 Sociocultural Perspectives on Language, Cognitive Development and EAL Instruction  
LING 350-3 First Language Acquisition

## Post Baccalaureate Diploma in Teaching English as a Second Language

**This program is under revision and admission is suspended. Contact the department.**

The Department of Linguistics and the Faculty of Education jointly offer this program. Students should apply to the advisor for program admission and should seek University admission separately. Applicants will be admitted by the joint steering committee consisting of members of the Department of Linguistics and the Faculty of Education under the following general requirements.

- completion of a bachelor's degree
- demonstrated knowledge of spoken and written English. See "English Language and Literacy Admission Requirement, and Quantitative and Analytical Skills Requirement" on page 17.
- an undergraduate concentration in one or more related disciplines such as linguistics, education, English or psychology. Completion of the certificate in TESL linguistics, or equivalent fulfills this requirement. Students may be admitted once they complete LING 310 plus the general requirements.
- some academic training or demonstrated ability in a language other than English

### Course Requirements

Students complete a 31 unit minimum chosen from linguistics, education, and individual and social development. The requirements are as follows.

#### Linguistics

The program requires an understanding of general linguistic theory and analysis principles, English language linguistic structure and acquaintance with structures of the languages of English learners.

Students complete 12 units in upper division linguistics courses, consisting of any two of  
LING 321-3 Phonology  
LING 322-3 Syntax  
LING 323-3 Morphology  
LING 324-3 Semantics  
LING 330-3 Phonetics  
6 units

**Note:** Students completing at least 12 units from the above list or equivalents must select approved substitutes from 400 division linguistics courses to fulfil the requirement of six units in this section.

plus any two of  
LING 360-3 Linguistics and Language Teaching  
LING 362-3 English as a Second Language: Theory  
LING 408-3 Field Linguistics  
LING 431-3 Language Structures I  
LING 432-3 Language Structures II  
LING 441-3 Language Universals and Typology  
LING 480-3 Topics in Linguistics I (when offered with a suitable topic)  
LING 481-3 Topics in Linguistics II (when offered with a suitable topic)  
6 units

**Note:** Students who have already received credit for courses in this list through previous programs may not complete them for further credit.

#### Education

Students should be conversant with language pedagogy principles in various classroom situations, and have an understanding of testing and assessment principles in classroom settings. Also required are practical classroom skills specific to teaching English to non-native speakers.

Students complete both of  
 EDUC 467-4 Curriculum and Instruction in Teaching English as a Second Language  
 EDUC 470-4 Experience in Teaching Students Who Have Limited English Proficiency 8 units

**Note:** Only students who have a current teaching placement should enrol in EDUC 470. In exceptional circumstances, alternative arrangements may be made after consultation with the steering committee.

plus 8-12 units chosen from the following  
 EDUC 325-3 Assessment for Classroom Teaching  
 EDUC 341-3 Literacy, Education and Culture  
 EDUC 342-3 Contemporary Approaches to Literacy Instruction  
 EDUC 367-4 Teaching Children from Minority Language Backgrounds in Elementary Classrooms  
 EDUC 422-4 Learning Disabilities  
 EDUC 424-4 Learning Disabilities: Laboratory  
 EDUC 468-4 Cognition and Language in ESL Instruction 8-12 units

**Note:** Those with credit for courses in this list through previous programs may not complete them again for further credit. Those with prior credit for EDUC 467 or the equivalent must select an alternative from this list.

#### Individual and Social Development

Theories of human development and language use, their implications for the classroom, and of the sociocultural context of learners and speakers represents a basic component in the preparation for language teaching.

Students complete any one of the following courses that has not been completed previously.

EDUC 320-3 Instructional Psychology  
 EDUC 326-3 Classroom Management and Discipline  
 EDUC 420-4 Cognitive Strategies in Learning  
 EDUC 422-4 Learning Disabilities  
 EDUC 425-4 School Counselling for the Classroom Teacher  
 EDUC 441-4 Multicultural Education  
 LING 309W-3 Sociolinguistics  
 LING 350-3 First Language Acquisition  
 SA 400-4 Canadian Ethnic Minorities 3-4 units

## Language Training Institute

8109 Robert C. Brown Hall, 778.782.4790 Tel,  
 778.782.7223 Fax, [www.sfu.ca/lti](http://www.sfu.ca/lti)

#### Director

(to be announced)

#### Associated Faculty

M. Escudero, Department of Linguistics  
 I. Galloway, Department of Linguistics  
 T. Heift, Department of Linguistics  
 B. Ng, Department of Linguistics  
 N. Omae, Department of Linguistics  
 M. Sevier, Department of Linguistics  
 L. Zuccolo, Department of Linguistics

#### Advisor

Ms. L. Jung BA (S Fraser), 8109 Robert C. Brown Hall, 778.782.4790, [lisa\\_jung@sfu.ca](mailto:lisa_jung@sfu.ca)

The Language Training Institute offers courses in Mandarin Chinese (CHIN), German (GERM), modern Greek (GRK), Japanese (JAPN), Spanish (SPAN), as well as other languages under the general language course designation (LANG).

LANG 100-149 (1-5) Introduction to a World Language I  
 LANG 150-199 (1-5) Introduction to a World Language II  
 LANG 200-249 (1-5) Intermediate Language Study I  
 LANG 250-299 (1-5) Intermediate Language Study II

Students with language competence beyond the course level in which they are enrolled will be required to withdraw. Students who are unsure of their language level are responsible for having their proficiency assessed prior to enrolment. Inquire at the Language Training Institute about the procedure.

Students who have completed, within the last two years, grade 12 in German, Japanese, Farsi or Spanish will not be admitted to Simon Fraser University GERM 102, 104, JAPN 100, LANG 118 or SPAN 102 for credit.

Students with high school Mandarin up to grade 12 will not be admitted to any 100 or 200 Chinese language course. Students who read and write Chinese but speak a dialect other than Mandarin should complete CHIN 151 or 152.

Refer to each language course outline for details.

The department reserves the right to withdraw or to transfer a student to a higher level course should the language proficiency of the student prove greater than initially supposed.

Contact the Language Training Institute for information about current specific language offerings.

Other departments providing language instruction include the Department of French (FREN and ITAL) (page 111) and the Department of Linguistics (LING, for First Nations languages) (page 123).

## Course Challenge

### Spanish

Up to 12 lower division Spanish units may be challenged for credit. Students wishing to challenge any or all of these must enrol in the courses to be challenged and in a Spanish language course for which the course(s) challenged is a prerequisite. A minimum grade of C in the higher course must be obtained to receive challenge credit.

### Chinese

Up to six lower division Chinese units may be challenged for credit. Students wishing to challenge any or all of these must register in the courses to be challenged and in a Chinese language course for which the course(s) challenged is a prerequisite. A minimum grade of C in the higher course must be obtained to receive challenge credit.

### Japanese

Up to six lower division Japanese units may be challenged for credit. Students wishing to challenge any or all of these must register in the courses to be challenged and in a Japanese language course for which the course(s) challenged is a prerequisite. A minimum grade of C in the higher course must be obtained to receive challenge credit.

### German

Up to six lower division German units may be challenged for credit. Students wishing to challenge any or all of these must register in the courses to be challenged and in a German language course for which the course(s) challenged is a prerequisite. A minimum grade of C in the higher course must be obtained to receive challenge credit.

## Language Learning Centre

7403 Robert C. Brown Hall, 778.782.4698 Tel,  
[www.sfu.ca/language-learning-centre](http://www.sfu.ca/language-learning-centre)

The centre provides instructional support for language teaching through lab facilities, materials library, language instructors and student consultation.

A multimedia language lab provides integrated computer, audio, and video resources in separate classroom and drop-in facilities.

## Certificate in Spanish Language

This program is for elementary and secondary school teachers, and undergraduates, wishing to improve Spanish oral and written proficiency. [Note that Spanish is not considered a 'teachable subject' for professional development program (secondary) application.] It is also for those who want to enhance their Spanish language knowledge for cultural, professional or employment purposes, or who desire official certification of Spanish proficiency. However, the certificate in Spanish language is not meant for native Spanish speakers.

Courses are offered during the day and evening. Additionally, a sequential course offering is scheduled, subject to sufficient enrolment, at the Vancouver campus each term.

### Requirements

Students successfully complete all of  
 SPAN 102-3 Introductory Spanish I  
 SPAN 103-3 Introductory Spanish II  
 SPAN 201-3 Intermediate Spanish I  
 SPAN 202-3 Intermediate Spanish II  
 SPAN 204-3 Spanish Vocabulary  
 SPAN 302-3 Spanish Conversation Through Cinema  
 SPAN 303-3 Spanish Composition, Translation and Conversation  
 SPAN 304-3 Advanced Spanish Composition, Translation and Conversation

plus two of

SPAN 301 Advanced Spanish Grammar and Writing  
 SPAN 305-3 Spanish for Business  
 SPAN 306-3 Spanish-English Translation

**Notes:** Exemption of up to 12 units from lower division Spanish language courses (SPAN 102, 103, 201 and 202 only) is possible through advanced placement. Students must demonstrate equivalent preparation. The exempt courses are replaced with credit obtained by

- approved transfer credit for Spanish courses completed at another post-secondary institution (subject to University regulations governing transfer credit approval), up to a maximum of six units

or

- challenge credit for exempted courses (subject to University regulations governing challenge credit approval), up to a maximum of six units

and/or

- successful completion of other Spanish courses at Simon Fraser University.

Students who hope to gain exemption should consult the Language Training Institute departmental assistant early in their program. Certificate credit may apply toward degree requirements under normal regulations but cannot be applied toward another Simon Fraser University certificate or diploma.

## Co-operative Education

This program, for qualified students to acquire practical experience in linguistics, entails planned study and work terms. For admission, students must normally have completed 30 units, including LING 130 and 220, and three other LING courses. At least 15 of the 30 units must be completed at Simon Fraser University with a minimum CGPA of 2.75.

College transfer students must complete at least 15 Simon Fraser University units before becoming eligible for co-op education admission and must satisfy the requirements given above, or their equivalents. College transfers who participated in co-op programs elsewhere may be credited with

completed term(s). The applicability of such terms depends on the evaluation of the department.

The following four courses are completed during four work terms.

LING 370-0 Linguistics Practicum I  
LING 371-0 Linguistics Practicum II  
LING 470-0 Linguistics Practicum III  
LING 471-0 Linguistics Practicum IV

Work term arrangements are made through the Faculty of Arts and Social Sciences co-op co-ordinator at least one term in advance (see page 212). To continue in the program, students must maintain a minimum 2.75 CGPA in academic course work. Contact the department for further information.

## Mathematics Program

K10508 Shrum Science Centre,  
778.782.3331/3332 Tel, 778.782.4947 Fax,  
www.math.sfu.ca

### Advisor

Ms. D. Yamaura, K10508 Shrum Science Centre,  
778.782.4980

Students wishing to major in any of the Department of Mathematics programs should seek department advice early about program planning.

For descriptions and prerequisites, see "Mathematics MATH" on page 417, and "Mathematics and Computing Science MACM" on page 422.

The Department of Mathematics offers a program of study within the Faculty of Arts and Social Sciences leading to a bachelor of arts degree with a major or honors in mathematics. Students interested in a bachelor of science in mathematics should see page 196 in the *Faculty of Science* section. Requirements for the bachelor of arts in mathematics are set out below.

### General Regulations

BA mathematics major or honors must satisfy the Faculty of Arts and Social Sciences requirements and the general University cumulative GPA and unit requirements. See "Mathematics MATH" on page 417 for entry requirements and department workshops.

### Prerequisite Grade Requirement

To enrol in a course offered by the Department of Mathematics, a student must obtain a grade of C- or better in each prerequisite course. Some courses may require higher prerequisite grades. Check the course's Calendar description for details.

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for more information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

### Beginning Level Requirements

See "Beginning Level Requirements" on page 197 for information concerning the Quantitative Placement Test, beginning mathematics courses and prerequisites.

## Major and Honors Programs

### Lower Division Requirements

Students complete either  
CMPT 126-3 Introduction to Computer Science and Programming

or both of  
CMPT 120-3 Introduction to Computing Science and Programming I  
CMPT 125-3 Introduction to Computing Science and Programming II

and one of  
MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I

and all of  
MACM 101-3 Discrete Mathematics I  
MACM 201-3 Discrete Mathematics II  
MACM 202-4 Mathematical Modeling and Computation  
MATH 152-3 Calculus II  
MATH 232-3 Elementary Linear Algebra  
MATH 242-3 Introduction to Analysis I  
MATH 251-3 Calculus III  
STAT 270-3 Introduction to Probability and Statistics

**Note:** With a C grade or better in relevant courses, these substitutions are permitted: MATH 154 or 157 for 151, MATH 155 or 158 for 152. Also, with a B grade or better, MATH 232 for 240. However, where possible, students are strongly encouraged to complete MATH 151, 152 and 240.

### Upper Division Requirements

All students must complete at least one from each of the following four groups of courses including one of  
MATH 308-3 Introduction to Optimization  
MATH 343-3 Applied Discrete Mathematics  
MATH 345-3 Introduction to Graph Theory

and one of  
MATH 320-3 Introduction to Analysis II  
MATH 322-3 Complex Variables

and one of  
MATH 338-3 Advanced Linear Algebra  
MATH 341-3 Algebra III: Groups  
MATH 342-3 Elementary Number Theory

and one of  
MATH 310-3 Introduction to Ordinary Differential Equations  
MACM 316-3 Numerical Analysis I

BA mathematics major students must obtain at least 30 units in upper division mathematics (MATH), or mathematics/computing science (MACM), or PHYS 413, or from the following statistics (STAT) courses: STAT 330, 350, 380, 402, 430, 450 and 460.

Of the 30 unit minimum total required for the mathematics major, at least 24 must be MATH or MACM courses. At least three of the courses used to satisfy this 30 unit requirement must be 400 division, of which at least two must be 400 division MATH or MACM courses. Students may not use a directed studies, job practicum, or honors essay course to fulfil the 400 division requirement.

### Honors Program Specific Requirements

In addition to the major program requirements, BA honors must complete CMPT 225, MATH 252 and obtain at least 18 additional units in upper division mathematics (MATH), or mathematics/computing science (MACM) courses, PHYS 413, or from the list of approved STAT courses listed under *Upper Division Requirements for the Mathematics Major Program*. Of this minimum 48 upper division units, at least 36 must be MATH or MACM courses.

At least five of the courses used to satisfy the 48 unit requirement must be 400 division, of which at least three must be MATH or MACM courses. Directed studies, job practicum or honors essay course may not be used to fulfil the 400 division requirement.

**Note:** Major or honors mathematics students should complete an upper division statistics course and an upper division MACM or CMPT course.

### Majors and Honors Program Electives

The student's program should include at least 65 units in arts subjects. Department of Mathematics courses may be counted. Also, the Faculty of Arts and Social Sciences breadth requirements must be met. Major students complete at least 45 upper division units including the major program requirements. Honors students must complete at least 60 upper division units including the honors requirements.

### Minor Program

For requirements, see "Department of Mathematics" on page 196 in the *Faculty of Science* section.

### Extended Minor Program

This program consists of the lower division requirements for a major and the upper division requirements for a minor. A student must have their extended minor program approved by the advisor.

## Department of Philosophy

4604 Diamond Building, 778.782.3343 Tel,  
778.782.4443 Fax, www.sfu.ca/philosophy

### Chair

L. Shapiro BA (Wesleyan), PhD (Pitts)

### Professors Emeriti

R.D. Bradley BA, MA (Auck), PhD (ANU)  
S. Davis BA (Roch), MA, PhD (Ill)  
F.J. Pelletier BS, MA (Nebraska), MSc, MSc (Alta), PhD (Calif)  
L. Resnick BA, PhD (Cornell)  
N.M. Swartz BA (Harv), MA, PhD (Indiana)

### Professors

R.E. Jennings BA, MA (Qu), PhD (Lond)  
M. McPherran BA, MA, PhD (Calif)  
D. Zimmerman BA, MA, PhD (Mich)

### Associate Professors

K. Akins BA (Manit), PhD (Mich), Burnaby Mountain Endowed Professor  
S. Black BA (C'dia), PhD (Camb)  
M. Hahn BA (S Fraser), MA (Br Col), PhD (Calif)  
P.P. Hanson BA (Calg), MA, PhD (Prin)  
L. Shapiro BA (Wesleyan), PhD (Pitts)  
E. Tiffany BA (Albion), PhD (Calif)

### Senior Lecturers

P.T. Horban BA (Sask), MA, PhD (WOnt)  
J.S. McIntosh BA (S Fraser), PhD (Br Col)

### Lecturer

J. Lough BA, MA (S Fraser)

### Advisor

Mr. D. Bevington, 4625 Diamond Building,  
778.782.4852

### General Information

All 100 division courses and PHIL XX1 improve critical thinking skills, logical analysis, clarity of expression, and teach important philosophical problems, perspectives and methods. All 100 division courses have no prerequisites, and can be completed in any order by any student in any faculty.

The 200 division courses are slightly more advanced with more specific subject matter. It is recommended (not mandatory) that students have completed 15 units of university work or equivalent before enrolling in a 200 division philosophy course. (PHIL 201, 203 and 214 have additional prerequisites.)

For 300 and 400 division courses, students normally must have completed at least six philosophy lower division units. However, this requirement may be waived by the department. Four hundred division

courses are more advanced than 300 division courses (there is more reading, the reading is more difficult, and more writing is required). Students should complete at least two 300 division courses before enrolling in a 400 division course.

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

### Seminars and Special Topics Courses

A student may not enrol in a philosophy seminar or selected topics course which duplicates work for which the student has received credit in another philosophy seminar or special topics course.

### Reading Lists and Course Outlines

Course outlines are available at the general office. Some course content varies with instructor.

## Major Program

### Lower Division Requirements

Students complete at least 15 lower division units including one of

PHIL 100-3 Knowledge and Reality  
PHIL 120-3 Introduction to Moral Philosophy

and one of

PHIL 150-3 History of Philosophy I  
PHIL 151-3 History of Philosophy II

and all of

PHIL 201-3 Epistemology  
PHIL 203-3 Metaphysics  
PHIL 210-3 Natural Deductive Logic

### Upper Division Requirements

At least 30 units of upper division credit is required as follows, and including one course at the 400 division.

At least one of

PHIL 320-3 Social and Political Philosophy  
PHIL 321-3 Moral Issues and Theories  
PHIL 322-3 History of Ethics\*  
PHIL 421-4 Ethical Theories

and at least one of

PHIL 302-3 Topics in Epistemology and Metaphysics  
PHIL 341-3 Philosophy of Science  
PHIL 343-3 Philosophy of Mind  
PHIL 344-3 Philosophy of Language I

and at least two of

PHIL 322-3 History of Ethics  
PHIL 350-3 Ancient Philosophy  
PHIL 352-3 17th Century Philosophy  
PHIL 356-3 18th Century Philosophy  
PHIL 357-3 Topics in the History of Philosophy  
PHIL 451-4 Kant

\*unless counted as a history stream requirement

## Honors Program

This program is for students who are capable of self-direction who wish to pursue advanced work in philosophy with the benefit of individual attention.

### Course Requirements

Entering students must first complete 60 units including 12 upper division philosophy units, and must fulfil lower division philosophy major requirements as listed above. Normally a 3.5 GPA or higher in upper division philosophy courses is expected for entrance and continuance but does not by itself guarantee

either. Students must submit an application (available in the department office), and consult the advisor.

Students pursuing honors must complete

- the philosophy major program requirements
- at least 50 philosophy upper division units
- and two honors tutorials in the last term, or last two terms, of the program

Tutorials offer sufficient time to examine in-depth several philosophical topics in a general area such as ethics, metaphysics, philosophy of mind, etc. The honors candidate must achieve a grade of B or higher in each honors tutorial to receive the honors degree.

## Minor Program

Students must complete at least 15 upper division units. Suggested lower division courses, including PHIL 100, 120, 150 or 151, and 201 or 203, provide a good basis for upper division courses. Other combinations are possible, and the student with particular upper division courses in mind should confirm prerequisites.

With the undergraduate advisor, a student may design a minor program with an emphasis that complements a special interest. For example, programs may be designed for students with an interest in law, language, natural or social science, history of ideas, social theory, value theory or logic.

## Extended Minor Program

This program consists of the lower division requirements for a major and the upper division requirements for a minor. Program approval by the advisor is required.

## Computing Science and Philosophy Joint Major Program

See "Computing Science and Philosophy Joint Major Program" on page 80 for information.

## Philosophy and Humanities Joint Major Program

See "Philosophy and Humanities Joint Major Program" on page 119 for information.

## Computing Science and Philosophy Joint Honors Program

See "Computing Science and Philosophy Joint Honors Program" on page 81 for information.

## Program in Cognitive Science

See page 98 for program information.

## Upper Division Courses Listed by Field (partial listing)

### Epistemology and Metaphysics

The following courses are a continuation of PHIL 100, 201 and 203 at a more advanced division.

PHIL 302-3 Topics in Epistemology and Metaphysics  
PHIL 455-4 Contemporary Issues in Epistemology and Metaphysics

### Logic

The following course offers concentrated work in logic and is a continuation of PHIL 210 and 214.

PHIL 314-3 Topics in Logic I

## Ethics

The following continuations of PHIL 120 and 220 present a wide range of issues and topics in ethics, and in political and social philosophy.

PHIL 320-3 Social and Political Philosophy  
PHIL 321-3 Moral Issues and Theories  
PHIL 322-3 History of Ethics  
PHIL 421-4 Ethical Theories

## History of Philosophy

The following continuations of PHIL 150 and 151 examine, at a more advanced division, the philosophical foundations of Western culture.

PHIL 322-3 History of Ethics  
PHIL 350-3 Ancient Philosophy  
PHIL 352-3 17th Century Philosophy  
PHIL 356-3 18th Century Philosophy  
PHIL 357-3 Topics in the History of Philosophy  
PHIL 451-4 Kant

## Science, Mind, Language

The following four courses introduce special areas of philosophical interest.

PHIL 341-3 Philosophy of Science  
PHIL 343-3 Philosophy of Mind  
PHIL 344-3 Philosophy of Language I  
PHIL 444-4 Philosophy of Language II

# Department of Political Science

6067 Academic Quadrangle, 778.782.4293 Tel,  
778.782.4786 Fax, www.sfu.ca/politics

### Chair

(to be announced)

### Professors Emeriti

T.H. Cohn BA (Mich), MA (Wayne), PhD (Mich)  
M.A. Covell BA (Br Col), MA, PhD (Yale)  
L.J. Erickson BA, PhD (Alta)  
E. McWhinney QC, LL.M., SJD (Yale)  
Q. Quo BA (Natnl Taiwan), MA (Oregon),  
PhD (S Illinois)  
M. Robin BA (Manit), MA, PhD (Tor)  
A.H. Somjee MA (Agra), PhD (Lond)

### Professors

M. Griffin Cohen BA (Iowa Wesleyan), MA (NY), PhD (York, Can)\*  
E. Hershberg BA (Indiana), MA, PhD (Wis)  
M. Howlett BSocSci (Ott), MA (Br Col), PhD (Qu),  
Burnaby Mountain Endowed Professor  
D. Laycock BA (Alta), MA, PhD (Tor)  
S. McBride BSc (Lond), MA, PhD (McM)  
P.F. Meyer BA (Wellesley), MA, PhD (Col)  
A. Moens BA (Leth), MA (McM), PhD (Br Col)  
A. Perl BA (Harv), MA, PhD (Tor)\*\*\*  
D.A. Ross BA, MA, PhD (Tor)  
P.J. Smith BA, MA (McM), PhD (Lond)  
H.M. Stevenson BA (Witw), MA (Mich), PhD (Northwestern), President of the University  
P.V. Warwick BA (McM), MA, PhD (Chic)\*\*\*\*\*

### Associate Professors

J. Busumtwi-Sam BA (Ghana), MA (Brock), PhD (Tor)  
L. Dobuzinskis LSocEcon (Paris), PhD (York, Can)  
A. Heard BA (Dal), MSc (Lond), PhD (Tor)  
A. Hira BA (Georgetown), MA (G Washington), PhD (Claremont)\*\*\*\*  
T. Kawasaki LLB (Doshisha), MA (Tor), PhD (Prin)\*\*  
S.J. MacLean BSc, MA, PhD (Dal)

### Assistant Professors

A.J. Ayers BA (Birm), MSc (Reading), PhD (Sus)  
K. Chenard BA (Birm), MA (Sorbonne), PhD (Laval/Sorbonne)  
G. Fuji Johnson BA (S Fraser), MA (LSE), PhD (Tor)  
J.F. Godbout BSe (Montr), MSe, PhD (Northwestern)



M. Pickup BA, MA (Calg), PhD (Br Col)  
S. Weldon BA (Wittenberg), MA, PhD (Calif)

#### Advisor

Ms. L. Kool BA (S Fraser), 6075 Academic  
Quadrangle, 778.782.3588 Tel, polda@sfu.ca

\*joint appointment with women's studies

\*\*joint appointment with Asia-Canada, humanities

\*\*\*joint appointment with urban studies

\*\*\*\*joint appointment with Latin American studies

\*\*\*\*\*joint appointment with international studies

Several programs are offered: honors, major, joint major, extended minor, minor. Students must meet the Faculty of Arts and Social Sciences breadth requirements. Please see "Writing, Quantitative, and Breadth Requirements" on page 88.

Students cannot complete upper division courses until lower division prerequisites are complete. Specified prerequisites or department permission is required for course entry. Students who fulfil the requirements may also complete POL 497, 498 and 499.

### Fields of Study

The introductory course is POL 100. All others except POL 498 and 499 are divided into five fields of study.

#### Field A Political Theory

POL 201-3 Research Methods in Political Science

POL 210-3 Introduction to Political Philosophy

POL 211-3 Politics and Ethics

POL 312-4 History of Political Thought II

POL 313-4 Political Ideologies

POL 314-4 Theory and Explanation in Political Science

POL 315-4 Quantitative Methods in Political Science\*\*

POL 319-4 Selected Topics in Political Theory

POL 411-4 Normative Political Theory

POL 415-4 The Liberal Tradition

POL 416-4 Feminist Social and Political Thought

POL 417-4 Human Rights Theories

POL 418-4 Selected Topics in Political Theory I\*

POL 419-4 Selected Topics in Political Theory II\*

\*these courses may require special prerequisites

\*\*SA 355 may substitute for POL 315

#### Field B Canadian Government and Politics

POL 221-3 Introduction to Canadian Government

POL 222-3 Introduction to Canadian Politics

POL 320-4 Canada and Latin America

POL 321-4 The Canadian Federal System

POL 322-4 Canadian Political Parties

POL 323-4 Provincial Government and Politics

POL 324-4 The Canadian Constitution

POL 327-4 Globalization and the Canadian State

POL 329-4 Selected Topics in Canadian Government and Politics

POL 347-4 Introduction to Canadian Foreign Policy

POL 422-4 Canadian International Security Relations

POL 423-4 BC Government and Politics

POL 424-4 Quebec Government and Politics

POL 426-4 Canadian Political Behavior

POL 428-4 Selected Topics in Canadian Government and Politics I\*

POL 429-4 Selected Topics in Canadian Government and Politics II\*

\*may require special prerequisites

#### Field C Comparative Government and Politics

POL 231-3 Introduction to Comparative Government and Politics

POL 232-3 US Politics

POL 335-4 Government and Politics: People's Republic of China I

POL 337-4 Government and Politics: Selected Latin American Nations I

POL 339-4 Selected Topics in Comparative Government and Politics

POL 381-4 Politics and Government of Japan I

POL 431-4 Comparative Western European Systems

POL 432-4 Comparative Communist and

Post-Communist Political Systems

POL 433-4 Comparative Developing Systems

POL 435-4 Comparative Federal Systems

POL 436-4 Elections, Parties and Governments in Comparative Perspective

POL 437-4 Governance and Globalisation

POL 438-4 Selected Topics in Comparative Government and Politics I\*

POL 439-4 Selected Topics in Comparative Government and Politics II\*

POL 441-4 Comparative Foreign Relations: Selected Political Systems

POL 481-4 Ethnic Politics and National Identity: Comparative Perspectives

\*may require special prerequisites

#### Field D International Relations

POL 241-3 Introduction to International Politics

POL 327-4 Globalization and the Canadian State

POL 341-4 International Integration and Regional Association

POL 342-4 Relations between Developed and Developing Nations

POL 343-4 Global Political Economy

POL 344-4 Public International Law

POL 345-4 The Nation-State and the Multinational Corporation

POL 346-4 International Organizations

POL 347-4 Introduction to Canadian Foreign Policy

POL 348-4 Theories of War, Peace and Conflict Resolution

POL 349-4 Selected Topics in International Relations

POL 373-4 Human Security

POL 422-4 Canadian International Security Relations

POL 440-4 Latin American International Relations

POL 441-4 Comparative Foreign Relations: Selected Political Systems

POL 442-4 The Politics of International Trade

POL 443-4 Nuclear Strategy, Arms Control and International Security

POL 444-4 Politics and Foreign Policy of the European Union

POL 445-4 American Foreign Policy: Processes, Issues

POL 446-4 International Relations in East Asia

POL 447-4 Theories of International Political Economy

POL 448-4 Selected Topics in International Relations I\*

POL 449-4 Selected Topics in International Relations II\*

POL 450-4 Globalization and Regional Politics in Latin America

\*may require special prerequisites

#### Field E Public Policy/Administration and Local Government

POL 151-3 The Administration of Justice

POL 251-3 Introduction to Canadian Public Administration

POL 252-3 Local Democracy and Governance

POL 351-4 The Public Policy Process

POL 353-4 Public Sector Management

POL 354-4 Comparative Metropolitan Governance

POL 356-4 The Political Economy of Labor

POL 359-4 Selected Topics in Governance

POL 451-4 Public Policy Analysis

POL 454-4 Urban Public Policy Making

POL 455-4 Issues in Economic and Social Policy

POL 457-4 Controversies in Policy Innovation and Design

POL 458-4 Selected Topics in Local and Urban Governance\*

POL 459-4 Selected Topics in Governance\*

\*may require special prerequisites

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

### Major Program

#### Lower Division Requirements

Students complete

POL 100-3 Introduction to Politics and Government (or 101W)

and one of

IS 240-3 Research Methods in International Studies\*

POL 201-3 Research Methods in Political Science\*

STAT 203-3 Introduction to Statistics for the Social Sciences

and

POL 210-3 Introduction to Political Philosophy

\*students may not complete both of IS 240 and POL 201 for credit

If completing both POL 201 and STAT 203, a Field A credit may be claimed for POL 201. In this situation, POL 201 should be completed before STAT 203.

In addition, nine lower division POL units, covering at least three of the five fields of study, are required.

#### Upper Division Requirements

Students complete 32 upper division POL units. Eight of these 32 units must be at the 400 division. This allows a student to concentrate course work in one field of study while attaining a broader understanding of the political science discipline.

### Honors Program

Students with a 3.0 CGPA and an upper division GPA of 3.33 are encouraged to apply for the honors program. A complete application, available from the departmental advisor, includes the essay proposal for POL 499 (Honors Thesis) and a letter of evaluation from the faculty member who agrees to supervise and evaluate the essay. Once the application is submitted, it is reviewed by the undergraduate studies committee in the term prior to honor program entrance.

#### Lower Division Requirements

Students complete both of

POL 100-3 Introduction to Politics and Government (or 101W)

POL 210-3 Introduction to Political Philosophy

and one of

IS 240-3 Research Methods in International Studies\*

POL 201-3 Research Methods in Political Science\*

STAT 203-3 Introduction to Statistics for the Social Sciences

If students plan to complete both POL 201 and STAT 203, a field A credit may be claimed for POL 201. In this case, POL 201 should be completed before STAT 203.

In addition, nine lower division POL units, covering at least three of the five fields of study, are required.

\*students may not complete both of IS 240 and POL 201 for credit.

#### Upper Division Requirements

Students complete 53 upper division POL units, including five for POL 499 (Honors Essay). An additional 16 of these 53 must be at the 400 division. POL 315 is strongly recommended.

## French Language Cohort Program in Public Administration and Community Services

198-A Cornerstone Building, 778.782.6858 Tel,  
778.782.6682 Fax, www.sfu.ca/frcohort,  
frcohort@sfu.ca

This cohort program, leading to a political science major with a French extended minor, or a French major with a political science extended minor, is primarily for French immersion and students who wish to develop their French language ability. It is most suitable for those entering directly from secondary school who plan to undertake full time study over a four year period. The program prepares students for French language public administration and community service careers, and for graduate study in political science or public administration, or French.

A substantial proportion of the program's instruction will be given in the French language, both in the Departments of French and Political Science, and in specially offered courses in other departments.

Through elective study, students may also complete the social studies requirements for the Professional Development Program in the Faculty of Education, an option that is recommended for teaching at the primary or secondary level.

Non-French cohort program students who wish to enrol in French cohort program courses taught in French must contact the French cohort program advisor.

### Admission Requirements

The cohort program (see below) begins in the fall term only, and is for those who have adequate competency in French, as determined by the French language placement test. As it is a cohort program in which students will move together through a significant proportion of their undergraduate studies, those with substantial university transfer credit may need to complete more than the normal 120 units to complete this program.

### Cohort Program

This program's feature is the group cohort setting where students work together in the same specially designed cohort courses. Cohort specific courses and course sections will be offered in French, while some required and elective courses will be taught in English. Visit [www.sfu.ca/cohort](http://www.sfu.ca/cohort) for a list of designated program courses, including the language of instruction and the course offerings schedule. At least one term at a francophone university is included.

### Designated Courses

Specific courses designated as part of the cohort program and the specified language of instruction may vary from time to time. Required courses, as set out below, are designated as cohort specific (cs), are taught in French, and will normally be open only to cohort students. Regular (r) courses will be taught in English, except for those in the Department of French, which will be taught in French.

### Political Science Major, French Extended Minor Program Requirements

#### Lower Division Requirements

Students complete 18 political science units as follows, 12 units of which will be taught in French.

- POL 100-3 Introduction to Politics and Government (cs) (or 101W)
- POL 201-3 Research Methods in Political Science (r)
- POL 210-3 Introduction to Political Philosophy (cs)
- POL 221-3 Introduction to Canadian Government (cs)

- POL 223-3 Canadian Political Economy (r)
- POL 251-3 Introduction to Canadian Public (cs) Administration

Students must also complete 18 units of French as follows, including four cohort-specific courses.

- FREN 212-3 French for Immersion Program Students (cs)
- FREN 221-3 French Writing I (cs)\*
- FREN 222-3 French Writing II (cs)
- FREN 225-3 Topics in French Language (cs)
- FREN 230-3 Introduction to French-Canadian Literature (r)
- FREN 270-3 Introduction to French Linguistics I (r)

\*Students receiving advanced placement above this level may receive permission to waive or challenge it.

#### Upper Division Requirements

Students complete 32 units of political science courses, including the four cohort-specific courses as shown below.

- POL 329-4 Selected Topics in Canadian Government and Politics
- POL 359-4 Selected Topics in Governance
- POL 459-4 Selected Topics in Governance: Planning Community-based Projects
- POL 497-4 Directed Practice in Political Science

An additional four upper division POL courses are required, including one course in Canadian government and politics, and one in public policy/administration and local government. Normally, two or three, equivalent to at least eight units, will be selected from transferable political science courses offered at the institution hosting the term.

Students must also complete an additional 15 units of French as specified below.

- Students complete
- FREN 301-3 Advanced French Composition and one of
- FREN 425-3 Topics in the Varieties of French
- FREN 452-3 Topics in French Cultures

A further nine units of French, to be chosen from among the remaining courses at the 300 and 400 division, must be completed. (FREN 360 and/or 370 may be completed in partial fulfilment.)

#### Additional Requirements

In addition, up to 17 units in other departments may be required in either lower or upper division courses. Such additionally designated courses will usually be taught in French, and will be subjects directly related to the program. These additional courses will be designated at the beginning of each entering cohort. Overall, cohort students may expect at least 80 units of instruction in French.

### French Major, Political Science Extended Minor Program Requirements

#### Lower Division Requirements

These requirements are the same as those shown above for the political science major, French extended minor program.

#### Upper Division Requirements

Students complete 16 units of political science courses for the extended minor and 30 units of French courses, including all requirements for the French major (see "Honors, Major, Extended Minor Programs" on page 112).

#### Additional Cohort Requirements

The courses listed below are those that will typically be required to complete the cohort program. Other appropriate courses may occasionally be substituted.

#### History

- Students complete all of
- HIST 101-3 Canada to Confederation (r)
- HIST 102W-3 Canada since Confederation (cs)

and one of

- HIST 204-3 The Social History of Canada (cs)
- HIST 214-3 Quebec Society, Culture, and Politics (cs)

#### Canadian Studies

Students complete  
CNS 210-3 Foundations of Canadian Culture (cs)

#### Electives

The cohort course requirements constitute 99 units, 81 of which are obtained through courses taught in French (as outlined above). The remaining required 21 units may be chosen from other university courses. Students intending to pursue graduate work, or a career in public administration, should include ECON 103, 105, and STAT 203. Students should also be aware of general university requirements when planning their electives. Assistance in planning electives to meet additional program requirements is available from the cohort program advisor.

## Minor Program

### Lower Division Requirements

Students complete one of  
POL 100-3 Introduction to Politics and Government  
POL 101W-3 Introduction to Politics and Government  
and at least nine additional lower division POL units.

### Upper Division Requirements

Students are required to complete 16 upper division units in any of the fields of study.

## Extended Minor Program

This program is based on the lower division requirements (100 and 200 division courses) of the major program and the upper division requirements (300 and 400 division courses) of the minor program.

## French, History and Politics Joint Major Program

Please see "French, History and Politics Joint Major Program" on page 113 for information.

## Political Science and Canadian Studies Joint Major Program

The lower division requirements are identical to the political science major program except that students are encouraged but not required to complete POL 201 or STAT 203. Political science upper division requirements follow. Students complete 32 units in three of five fields. Up to 12 units in both political science and Canadian studies may be used toward upper division requirements of both departments. See the political science or Canadian studies advisor or see "Joint Major Programs" on page 96.

## Political Science and Economics Joint Major Program

This program explores the fields of political science and economics, and develops an appreciation of the ways in which economic and political phenomena condition and interact in the modern world. Consult advisors in both departments.

### Lower Division Requirements

#### Political Science

- Students complete all of
- POL 100-3 Introduction to Politics and Government (or 101W)
- POL 221-3 Introduction to Canadian Government
- POL 222-3 Introduction to Canadian Politics
- POL 251-3 Introduction to Canadian Public Administration

plus one of  
 BUEC 232-3 Elementary Economic and Business Statistics I  
 CRIM 220-3 Research Methods in Criminology  
 ISO 240-3 Research Methods in  
 POL 201-3 Introduction to Research Methods in Political Science\*  
 PSYC 201-4 Research Methods in Psychology  
 SA 255-4 Introduction to Social Research  
 STAT 203-3 Introduction to Statistics for the Social Sciences  
 STAT 270-3 Introduction to Probability and Statistics  
 plus six lower division units from at least one of the remaining fields of study (field A, C or D) to total 21.  
 \*recommended

### Economics

Students complete the following with a grade of at least C- prior to joint major program admission.

ECON 103-4 Principles of Microeconomics  
 ECON 105-4 Principles of Macroeconomics  
 MATH 157-3 Calculus for the Social Sciences (or equivalent)

To meet the requirements, students also complete BUEC 232-4 Data and Decisions I

and two 200 division ECON or BUEC courses (in addition to BUEC 232)

### Upper Division Requirements

#### Political Science

Students complete 24 units from at least three political science fields of study, including a minimum of eight units (two courses) in field E. Beyond field E, the following are highly recommended.

POL 313-4 Political Ideologies  
 POL 321-4 The Canadian Federal System  
 POL 342-4 Relations Between Developed and Developing Nations  
 POL 343-4 Global Political Economy  
 POL 345-4 The Nation-State and the Multinational Corporation  
 POL 427-4 The Legislative Process in Canada  
 POL 447-4 Theories of International Political Economy

#### Economics

Students complete at least 25 units of upper division credit in economics including all of  
 BUEC 333-3 Statistical Analysis of Economic Data  
 ECON 301-5 Microeconomic Theory I: Competition Behavior  
 ECON 302-4 Microeconomic Theory II: Strategic Behavior  
 ECON 305-5 Intermediate Macroeconomic Theory  
 and at least one 400 division ECON or BUEC course (excluding ECON 431, 435 and BUEC 433).

#### Group Requirements

To meet the Department of Economics group requirements for the economics major program, students must include at least one course from the economics group requirements. For information, see "Group Requirements" on page 105.

### Political Science and Latin American Studies Joint Major Program

Political science requirements are identical to the major program except that students are encouraged but not required to complete POL 201 or STAT 203. POL 337 may not be used to satisfy Latin American studies requirements. For information see the advisors see "Joint Major Programs" on page 122.

### Political Science and Women's Studies Joint Major Program

This program explores the political dimensions and context of women's experience, and the impact of women and feminist theory on the practice and study of politics. Consult advisors in both departments.

### Lower Division Requirements

#### Political Science

Students complete

POL 100-3 Introduction to Politics and Government (or 101W)

plus one of  
 BUEC 232-3 Elementary Economic and Business Statistics I  
 CRIM 220-3 Research Methods in Criminology  
 IS 240-3 Research Methods in  
 POL 201-3 Research Methods in Political Science\*  
 PSYC 201-4 Introduction to Research Methods in Psychology  
 SA 255-4 Introduction to Social Research  
 STAT 203-3 Introduction to Statistics for the Social Sciences  
 STAT 270-3 Introduction to Probability and Statistics

plus an additional nine units of lower division courses chosen from three of the five fields of study (field A, B, C, D and/or E), for a total of 15 lower division units.

\*recommended

#### Women's Studies

Students complete 15 lower division units in women's studies including both of  
 WS 101-3 Introduction to Women's Issues in Canada  
 WS 102-3 Introduction to Western Feminism

and one of  
 WS 207-3 Introduction to Feminist Theory  
 WS 208-3 Feminist Research Methods

### Upper Division Requirements

#### Political Science

Students complete 24 upper division units from at least three political science fields of study. It is strongly recommended that POL 416 be included.

#### Women's Studies

Students complete 20 upper division units in women's studies.

### Certificate in African Studies

This program requires a minimum of 30 units: 18 lower division and 12 upper division. Special topics courses relevant to Africa may be included in place of those listed below with permission of the certificate program committee. Visit the department's general office to obtain a list of University-wide courses with African content.

### Lower Division Requirements

Students complete six of the following courses.  
 ARCH 252-3 Ancient Egypt and Africa  
 HIST 146-3 Africa after the Transatlantic Slave Trade  
 HIST 151-3 The Modern Middle East  
 HIST 231-3 History of Africa to the Nineteenth Century: From Ancient Times to the Slave Trade  
 HIST 249-3 Classical Islamic Civilization  
 IS 210-3 Comparative World Politics: Trajectories, Regimes, Challenges  
 POL 231-3 Comparative Politics  
 POL 241-3 Introduction to International Politics

### Upper Division Requirements

Students complete three of the following, plus any prerequisite courses (see "Course Catalogue" on page 311 for relevant courses).

HIST 343-4 Africa and the Slave Trade  
 HIST 344-4 Themes in Modern East Africa

HIST 348-4 A History of Twentieth Century South Africa  
 HIST 354-4 Imperialism and Modernity in the Middle East  
 HIST 466-4 Religion and Society in Africa, Nineteenth and Twentieth Century  
 HIST 467-4 Modern Egypt  
 HIST 473-4 The Making of South African Society  
 POL 374-4 Africa in the Global Political Economy  
 POL 470-4 African Social and Political Thought

### Co-operative Education

Practical experience related to political science is gained through planned co-op study terms and employment, and is competitive. Not all applicants gain their exact chosen placements, but the program endeavors to provide a placement to all qualified applicants. For admission, 30 units with a minimum 3.0 CGPA is required. Transfer students must complete at least 15 Simon Fraser University units. See "Co-operative Education" on page 212. Work term arrangements are made with the Faculty of Arts and Social Sciences co-op co-ordinator at least one term in advance.

## Department of Psychology

5246 Robert C. Brown Hall, 778.782.3354 Tel, 778.782.3427 Fax, www.psyc.sfu.ca

#### Chair

(to be announced)

#### Professors Emeriti

B.K. Alexander BA (Miami, Ohio), MS, PhD (Wis)  
 E. Ames BSc (Tufts), PhD (Cornell)  
 P. Bakan BA, MA, PhD (NY)  
 M.L. Bowman BA (Alta), MSc, PhD (McG)  
 C.B. Crawford BA, MSc (Alta), PhD (McG)  
 A.L. Diamond BA (Cinc), MA, PhD (Col)  
 M. Kimball BA (Macalester), PhD (Mich)  
 D.L. Krebs BA (Br Col), MA, PhD (Harv)  
 J.E. Marcia BA (Wittenberg), MA, PhD (Ohio State)  
 V. Modigliani DottFisica (Rome), MA, PhD (Wayne State)  
 A.C. Paranjpe BA, MA, PhD (Poona)  
 J.N. Strayer BA (Col), MA, PhD (S Fraser)  
 C.D. Webster BA (Br Col), MA (Qu), PhD (Dal)  
 B.W.A. Whittlesea BA, MA (Windsor), PhD (McM)

#### Professors

K. Bartholomew BA (S Fraser), PhD (Stan)  
 J. Carpendale BA, MA (S Fraser), PhD (Br Col)  
 S.D. Hart BA, PhD (Br Col)  
 M.D. Maraun BA (S Fraser), MA (Guelph), PhD (Tor)  
 J. Martin BA, MEd, PhD (Alta), Burnaby Mountain Endowed Professor  
 C.G. McFarland BA (Alta), MA, PhD (Wat)  
 R. Mistlberger BA (McG), PhD (Chic)  
 M.M. Moretti BA (Brock), MA, PhD (S Fraser)  
 J.D. Read BA (Br Col), MS, PhD (Kansas)  
 U. Ribary MSc, PhD (Swiss Inst Tech), LEEF Chair in Cognitive Neuroscience in Early Childhood Health and Development  
 R.M. Roesch BS (Arizona), PhD (Ill)  
 N.V. Watson BA, MA (WOnt), PhD (Br Col)  
 D.J. Weeks BA (Windsor), MSc (McM), PhD (Auburn)  
 S.C. Wright BA (Winn), MA, PhD (McG), Canada Research Chair

#### Associate Professors

D. Connolly BA, MA (W Laur), LLB, PhD (Vic, BC)  
 D.N. Cox BA, MA, PhD (Br Col)  
 K.S. Douglas BA, MA, PhD (S Fraser), LLB (Br Col)  
 R.T. Fouladi BA, MA, PhD (Br Col)  
 G. Iarocci BA, MA, PhD (McG)  
 W.R. Krane BA (Windsor), MA, PhD (York, Can), Associate Vice-President Academic

R.G. Ley BA (S Fraser), MA, PhD (Wat)  
 M. Liotti, MD (Naples), PhD (Parma)  
 J.J. McDonald BA (S Fraser), MA, PhD (Br Col),  
 Canada Research Chair  
 T.M. Spalek BSc, MA, PhD (Tor)  
 A.E. Thornton BA (Minn), MSc (Memphis State), PhD  
 (Memphis)  
 R.D. Wright BA (Br Col), MA, PhD (WOnt)  
 A. Young BA (Guelph), MSc, PhD (Wat)

#### Assistant Professors

M. Blair BS (Maryland), MA, PhD (Arizona State)  
 A.L. Chapman BA (Br Col), MS, PhD (Idaho State)  
 R.J. Cobb BA (S Fraser), MA, PhD (Calif)  
 A. Herdman BSc, MSc (S Fraser), PhD (Br Col)  
 T.P. Racine BA, MA, PhD, (S Fraser)  
 M.T. Schmitt BS (James Madison), MA, PhD (Kansas)  
 K.L. Slaney BA, MA, PhD (S Fraser)  
 W.L. Thornton BA (St Olaf), MSc (Memphis State),  
 PhD (Memphis)  
 J.L. Viljoen BA (Alta), MA, PhD (S Fraser)  
 S.L. Zaitsoff BA (S Fraser), MSc, PhD (Windsor)

#### Adjunct Professors

P. Bartel BA, MA, PhD (S Fraser)  
 D. Bernstein BA (Calif), MA (Rock), PhD (S Fraser)  
 R. Brown BSc, PhD (Lond)  
 K.M. Christensen BA (McG), BSc, PhD (Vic, BC)  
 L. Deecke BA, MSc, PhD (Freiburg)  
 V. Di Lollo BA, PhD (WAust)  
 D.G. Dutton BA, MA, PhD (Tor)  
 R. Faragher BSc, BEd, BEd (Qld)  
 A. Gordon BSc (McG), MSc, PhD (Qu)  
 H. Gretton BA (Calg), MA, PhD (Br Col)  
 J.F. Hemphill BA (Br Col), MA (Sask), PhD (Br Col)  
 H. Herve MA, PhD (Br Col)  
 R. Holland BA (York, Can), MD (McMr), FRCP  
 G. Iaria BA, MA (Rome), PhD (McG)  
 M. Kendrick BA, MA, PhD (Br Col)  
 W. Koch BA (Montana), MA, PhD (Alta)  
 R. Kropp BA (Br Col), MA, PhD (S Fraser)  
 D.R. Laws BA (Missouri), MA, PhD (S Illinois)  
 D. Low MSc, MD (Qu), PhD (Baylor Coll)  
 J.W. MacDonald BA (Detroit), MS, PhD (Wyoming)  
 J. Martzke BS (Wis), MA, PhD (Iowa)  
 D.J. Meen BAMED (Alta), PhD (Manit)  
 T. Nicholls BA (Leth), MA, PhD (S Fraser)  
 M.C. Olley BA (Sask), MA, PhD (S Fraser)  
 G. Poole BA (S Fraser), MA (San Diego),  
 PhD (S Fraser)  
 L. Roberts BA, PhD (Minn)  
 G.N. Smith BA (Vic, BC), MA, PhD (Br Col)  
 B. Sokol BA (St Louis), MA, PhD (Br Col)  
 J. Ternes BA (Wat), MA, PhD (Br Col)  
 G. Tien BSc, MA (S Carolina), PhD (S Fraser)  
 C. Vanston BA, MSc, PhD (S Fraser)  
 N. Virji-Babul BHSc (McM), MA (Col), PhD (WOnt)  
 J. Vrba MSc (Prague), PhD (Alta)  
 C.L. Wellington, BSc (Alta), PhD (Br Col)  
 T. Welsh BPHE (Tor), MSc, PhD (McM)  
 T. Woodward BSc, MA, PhD (Vic, BC)

#### Associate Members

D. Goodman, Department of Biomedical Physiology  
 and Kinesiology  
 A. Horvath, Faculty of Education  
 N. O'Rourke, Department of Gerontology  
 F.J. Pelletier, Department of Philosophy  
 J. Sugarman, Faculty of Education  
 C. Waddell, Faculty of Health Sciences  
 H. Weinberg, School of Kinesiology

#### Senior Lecturers

G. Alder BA (S Fraser), MSc, PhD (Calg)  
 R. Day BA (Vic, BC), MA (Guelph), PhD (S Fraser)  
 V.G. Rose LLM (Tor), MA, PhD (S Fraser)

#### Advisors

Ms. T. Anbinder BA (S Fraser), 5253 Robert C. Brown  
 Hall, 778.782.3359, t\_a@sfu.ca  
 Ms. B. Davino, 5249 Robert C. Brown Hall,  
 778.782.4840

## Letters of Permission

See "Courses at Other Institutions/Letters of Permission" on page 28. The department does not normally approve letters of permission for enrolled Simon Fraser University students to complete PSYC 201, 210 and 301 at a different institution. Such permission may be granted for other courses. Enquire of the psychology undergraduate advisor.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

## Major Program

To be admitted, students must obtain a grade of C (2.0) or better in **each** of the following courses.

PSYC 100-3 Introduction to Psychology I  
 PSYC 102-3 Introduction to Psychology II  
 PSYC 201-4 Introduction to Research Methods in Psychology  
 PSYC 207-3 Introduction to History of Psychology  
 PSYC 210-4 Introduction to Data Analysis in Psychology

**Note:** The above requirement applies to courses transferred from other institutions as well as to courses completed at Simon Fraser University.

PSYC 100 should be completed in the first term and PSYC 102 should follow PSYC 100 as early as possible. (Concurrent enrolment is not permitted.) PSYC 201 and 210 should be completed during the first four terms.

To receive a major in psychology, students must

- meet the graduation requirements of the University (see "Student Appeals" on page 32) and Faculty of Arts and Social Sciences (see "Graduation GPA Requirements" on page 89)
- complete one course from group A: PSYC 221 or 280
- complete one course from group B: PSYC 241, 250, 260, 268, 270
- complete one additional course from either group A or group B
- complete PSYC 300 with a grade of C or better
- complete 30 upper division psychology units. No more than six directed studies units may be applied to the major. A minimum of 15 upper division psychology units must be completed at Simon Fraser University.

## Honors Program

Obtain the application form and information hand-out at the general office, and at [www.psy.sfu.ca/ugrad](http://www.psy.sfu.ca/ugrad). Applicants meeting the minimum admission requirements are not assured program admission. Admission decisions are based on the student's academic record, potential, and suitability for the program as assessed by a review of the application. Application deadline: May 1.

## Admission Requirements

- completion of 75 units with a minimum 3.33 CGPA
- a minimum 3.33 CGPA on all Simon Fraser University courses
- completion of 15 Simon Fraser University psychology units with a minimum 3.0 CGPA
- completion of one course from group A, one from group B, and one from either group A or group B  
 Group A – PSYC 221, 280  
 Group B – PSYC 241, 250, 260, 268, 270

- completion of PSYC 300 with a grade of B or better
- completion of PSYC 301 with a grade of B or better
- attendance at an honors information session
- approval and signature of a psychology department faculty member to supervise the honors project
- approval of a brief research proposal

## Continuation

- maintain a minimum 3.0 CGPA for all courses completed in each term
- maintain a minimum 3.0 CGPA for all psychology courses completed in each term
- attend the appropriate graduate area research seminar while enrolled in PSYC 490/499.

Students not meeting the requirements may be dropped from the program, but may apply for readmission at a later date.

## Completion

Students complete 60 upper division units, of which 50 must be in upper division psychology courses, including both of  
 PSYC 490-4 Honors Project\*  
 PSYC 499-6 Honors Project\*

\*together comprise the honors project and are completed only after completion of 90 units, with at least 20 units in upper division psychology courses.

No more than nine upper division units may be in directed studies. Up to 12 upper division units may be approved options from other departments.

Students must also meet the University's and faculty's honors graduation requirements and obtain certification by the undergraduate studies committee that the program has been satisfactorily completed.

## Minor Program

To be admitted, students must obtain a final course grade of C (2.0) or better in **each** of the following.

PSYC 100-3 Introduction to Psychology I  
 PSYC 102-3 Introduction to Psychology II  
 PSYC 201-4 Introduction to Research Methods in Psychology

**Note:** The above applies to transferred courses as well as to Simon Fraser University courses.

Students complete two of  
 PSYC 221-3 Introduction to Cognitive Psychology  
 PSYC 241-3 Introduction to Abnormal Psychology  
 PSYC 250-3 Introduction to Developmental Psychology  
 PSYC 260-3 Introduction to Social Psychology  
 PSYC 268-3 Introduction to Law and Psychology  
 PSYC 270-3 Introduction to Theories of Personality  
 PSYC 280-3 Introduction to Biological Psychology

and a minimum of 15 upper division psychology units with a 2.0 cumulative CGPA. No more than three units may be in directed studies. At least eight upper division units must be completed at the University.

Approved criminology majors or honors who intend to minor in psychology, and have successfully completed CRIM 220 (with a final C grade [2.0] or better), may request a waiver for PSYC 201 by petitioning the undergraduate advisor.

## Extended Minor Program

An extended minor consists of all major program lower division requirements and all minor program upper division requirements. Programs must be approved by the extended minor program advisor.

## Behavioral Neuroscience Program

See "Behavioral Neuroscience Program" on page 94.

## Psychology and Business Administration Joint Major Program

For information, see "Business Administration and Psychology Joint Major Program" on page 147.

## Psychology and Criminology Joint Major Program

For information, see "Criminology and Psychology Joint Major Program" on page 102.

## Psychology and Women's Studies Joint Major Program

For information, see "Women's Studies and Psychology Joint Major Program" on page 141.

## Co-operative Education

Co-operative education, for qualified students who want work experience, entails study terms and employment in the area of the student's choice.

**Note:** This program will not provide training in clinical psychology or therapeutic techniques.

For admission, 30 units with a minimum 3.0 CGPA is required. Prior to admission, students must complete PSYC 100, 102, 201 and 210 or their equivalents. Transfer students must complete at least 15 units at Simon Fraser University. See page 212. Work arrangements are made through the Faculty of Arts and Social Sciences co-op co-ordinator who should be consulted at least one term in advance.

## Advice to Students from Other Departments

To enrol in psychology courses, students must meet the prerequisites or special instructions. The listed prerequisites indicate the minimal background expected by instructors.

The department reserves one hundred per cent of all 300 and 400 division PSYC courses for approved psychology major, minor or honors students. Those who are not approved cannot enrol in these upper division courses until the open enrolment date, which is usually day 21 of the enrolment period.

## Psychology and Statistics

A level of statistical sophistication is required before undertaking independent research or evaluating research of others. The department offers several courses in research methodology and data analysis: PSYC 201, 210, 301, 410, 411. Students who have a special interest in more extensive statistical training to facilitate their work in psychology should also consider courses from STAT 270 and above, and in particular, STAT 270, 302, 330, 403, 410 and 430.

## Directed Studies Courses

PSYC 493, 494, and 495 are directed studies courses. Enrolment enables an individual or small group to work with a faculty member on a reading or research project of mutual interest. Common reasons for a student requesting such a course are

- to continue a reading or research project begun in a 400 division seminar
- to cover material not included in regular courses

The minimum requirement is a B (3.0) average, at least 60 units and department permission. Directed studies students complete an application form (available in the department) with the intended instructor.

## Department of Sociology and Anthropology

5054 Academic Quadrangle, 778.782.3146 Tel, 778.782.5799 Fax, www.sfu.ca/sociology

Affiliation with the two divisions within the department is shown as follows: A – anthropology; S – sociology

### Chair

J. Pulkington MA, PhD (Edin)

### Professors Emeriti

H. Adam Dipl Sociol DrPhil (Fran), Habilitation – S  
A. McLaren BA (Br Col), MA (Iowa), PhD (Lond) – S  
H. Sharma MA (Delhi), MS (Cleveland), PhD (Cornell) – S  
I.R. Whitaker MA (Camb), DPhil (Oslo) – A  
R.W. Wyllie BA (Leic) – S

### Professors

D.E. Chunn BA (Br Col), MA, PhD (Tor) – S  
P. Dossa BA, MA (Edin), PhD (Br Col) – A  
N. Dyck BA, MA (Sask), PhD (Manc) – A  
M. Kenny BA, MA (Virginia), DipSocAnthrop, DPhil (Oxf) – A  
R.J. Menzies, BA (York, Can), MA, PhD (Tor) – S  
C.K. Patton BA (Appalachian State), MTS (Harvard), PhD (Mass), Canada Research Chair\*\*\*\* – A  
G. Otero BA (IT Monterrey), MA (Tex), PhD (Wis) – S  
G.B. Teeple BA, MA (Tor), DPhil (Sus) – S

### Associate Professors

Y. Atasoy BSc (AcadSocSc, Ankara), MSc (MidEastTech, Ankara), PhD (Tor) – S  
M. Boelscher Ignace MA (Georg August Universitat), PhD (S Fraser)\*\* – A  
W. Chan BA (Carl), MA (Sheff), MAPhil, DPhil (Camb) – S  
D. Culhane BA, PhD (S Fraser) – A  
K. Froschauer BA, MA (Br Col), PhD (Carl) – S  
M. Gates BA (Sheff), MA, PhD (Br Col) – A  
D. Lacombe BA (Sher), MA, PhD (Tor) – S  
B. Mitchell BA, MA (Wat), PhD (McM)\*\*\* – S  
S. Pigg BA, MA, PhD (Cornell) – A  
J. Pulkington MA, PhD (Edin) – S

### Assistant Professors

F. de Maio BA (Tor), MA, PhD (Essex) – S  
M. Hathaway BA (Calif), MS, MA, PhD (Mich) – A  
A. Travers BA (S Fraser), MA (Br Col), PhD (Ore) – S  
H. Wittman BA (Wash), MA, PhD (Cornell) – S  
J. Yang BA (Shandong), MA (Beijing Lang Citre), PhD (Tor) – A

### Adjunct Professors

C. Allen BA (Dayton), MA, PhD (Essex)  
R. Bateman BA, MA (Oklahoma), PhD (Johns Hopkins) – A  
S. Migliore, BA, MA, PhD (McM) – A  
P. Stern BA (Flor), MA (Pitts), PhD (Calif)

### Senior Lecturer

J. Bogardus BA, MA (Br Col), PhD (S Fraser) – A  
A. Burk BA (Antioch), PhD (S Fraser)

### Advisor

Ms. K. Payne, 5055 Academic Quadrangle, 778.782.3726

### Faculty Advisor

Dr. J. Bogardus BA, MA (Br Col), PhD (S Fraser), 5078 Academic Quadrangle, 778.782.6629

\*\*\*joint appointment with First Nations studies

\*\*\*\*joint appointment with gerontology

\*\*\*\*joint appointment with women's studies

The department's courses provide theoretical analytical understanding of the social and cultural forces affecting our lives and other societies leading to more effective society participation. Simon Fraser University sociologists and anthropologists conduct research and teach courses about Western industrial

societies, Third World societies, and theoretical and comparative questions beyond national boundaries.

The department offers honors and majors in sociology and/or anthropology and minors in sociology and anthropology. Honors and major students may complete options such as an applied social research stream and a co-operative education program. Joint majors are available with archaeology, art and culture studies, Canadian studies, communication, criminology, Latin American studies, linguistics, and women's studies. Joint honors are available with Canadian studies, Latin American studies and sociology and anthropology. The department also offers a certificate in ethnic and intercultural relations.

As well as intellectual rewards, undergraduate sociology and anthropology training provides invaluable background for careers in urban planning, journalism, law, public administration, welfare related professions, teaching, personnel management, health care fields, and international development projects.

Courses provide students specializing in other disciplines with social and cultural processes that complement their studies. Especially appropriate are SA 100, 101, 150, 201, 286, which require no prerequisites. Other courses dealing with important contemporary issues such as SA 203, 218 and 260 are open to students with one introductory course.

## Course Selection

Consult departmental hand-outs available in the SA general office, as there are differing emphases in course outlines from term to term.

Normally, directed readings courses SA 496 and 497 are available only to SA major and honors students. Credit will be given for only one of these.

Some courses in other departments are relevant to certain areas of sociology and anthropology. Honors and majors in sociology and/or anthropology are urged to prepare themselves broadly by completing additional courses in other departments, after consultation with an advisor.

Many graduate schools require a reading knowledge of a language other than English. Those considering graduate studies should include an appropriate second language in their program.

To assist students to plan an interdisciplinary program, the following list of courses identify the three disciplines into which all sociology and anthropology courses are divided. For details about these courses, see "Sociology and Anthropology SA" on page 441 of the *Course Catalogue*.

### Anthropology Courses

SA 101, 201, 245, 286, 301, 318, 323, 332, 352, 401, 402, 451, 472, 486, 496

### Sociology Courses

SA 150, 231, 250, 260, 304, 321, 322, 325, 326, 327, 331, 333, 335, 350, 351, 353, 362, 416, 450, 497

### Sociology and Anthropology Courses

An SA course can be counted as either sociology or anthropology.

SA 100, 203, 218, 255, 275, 300, 302, 303, 315, 316, 319, 320, 337, 340, 345, 355, 356, 357, 358, 360, 361, 363, 364, 365, 371, 386, 388, 392, 396, 400, 418, 420, 429, 430, 435, 447, 455, 460, 463, 498, 499

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

## Major Programs

### Lower Division Requirements

Lower division requirements provide a broad introduction to both disciplines, to critical analysis of Canadian society, to basic logic and methods used in social research, and to the application of these methods to topics of special interest to students.

Students should complete all lower division requirements before completing upper division courses.

#### Anthropology Major

Students complete all of

- SA 101-4 Introduction to Anthropology (A)
- SA 150-4 Introduction to Sociology (S)
- SA 201W-4 Anthropology and Contemporary Life (A)
- SA 255-4 Introduction to Social Research (S or A)

plus one additional 200 division course in anthropology and/or sociology.

#### Sociology Major

Students complete all of

- SA 100-4 Perspectives in Canadian Society (S or A)
- SA 101-4 Introduction to Anthropology (A)
- SA 150-4 Introduction to Sociology (S)
- SA 250-4 Introduction to Sociological Theory (S)
- SA 255-4 Introduction to Social Research (S or A)
- STAT 203-3 Introduction to Statistics for Social Sciences

**Note:** Students with an equivalent post-secondary statistics course are exempt from STAT 203. It is, however, highly recommended that students complete SA 255 before completing STAT 203.

### Upper Division Requirements

Students must meet theory and methods requirements (see program options for specifics). In our information-based society, many employers and most graduate schools require considerable knowledge of conceptualizing research problems, information gathering, analysis and presentation. Students are strongly urged to balance theory courses with methods courses above the minimum and they may choose to range broadly across the two disciplines or to focus on a special interest. Courses fall broadly into the following groups.

#### Courses in Anthropology (A)

The following courses count as anthropology credit toward the anthropology major or minor.

- SA 301-4 Contemporary Ethnography (A)
- SA 302W-4 Global Problems and the Culture of Capitalism (S or A)
- SA 318-4 The Anthropology of Medicine (A)
- SA 319-4 Culture, Ethnicity and Aging (A)
- SA 323-4 Symbol, Myth and Meaning (A)
- SA 332-4 The Anthropology of Childhood (A)
- SA 352-4 Games, Sports and Culture (A)
- SA 355-4 Quantitative Methods (S or A)
- SA 356W-4 Ethnography and Qualitative Methods (S or A)
- SA 357W-4 Survey Methods (S or A)
- SA 365-4 Selected Regional Areas (A)
- SA 368-4 Language, Ideology, and Power (A)
- SA 401-4 The Politics of Culture in Contemporary Societies (A)
- SA 402-4 The Practice Of Anthropology (A)
- SA 421-4 Commodities and Substances: Bodies, Consumption and Ingestion (A)
- SA 451-4 Issues in Anthropological Theory (A)
- SA 472-4 Anthropology and the Past (A)
- SA 486-4 Aboriginal Peoples and British Columbia: Advanced Seminar (A)
- SA 496-4 Directed Readings in Anthropology (A)
- SA 498-8 Field Study in Sociology and/or Anthropology (S or A)
- SA 499-4 Independent Project (S or A)

#### Courses in Sociology (S)

These courses count as sociology credit toward the sociology major or minor.

- SA 300-4 Canadian Social Structure (S)
- SA 302W-4 Global Problems and the Culture of Capitalism (S or A)
- SA 304-4 Social Control (S)
- SA 321-4 Social Movements (S)
- SA 322-4 Sociology of Religion (S)
- SA 325-4 Political Sociology (S)
- SA 327-4 Sociology of Knowledge (S)
- SA 331-4 Politics of the Family (S)
- SA 333-4 Schooling and Society (S)
- SA 335-4 Gender Relations and Social Issues (S)
- SA 337-4 Sexuality and Society (S)
- SA 350-4 Classical Sociology Thought (S)
- SA 351-4 Classical Marxist Thought (S)
- SA 353-4 Sociology of Sport (S)
- SA 355-4 Quantitative Methods (S or A)
- SA 356W-4 Ethnography and Qualitative methods (S or A)
- SA 357W-4 Survey Methods (S or A)
- SA 362-4 Society and the Changing Global Division of Labor (S)
- SA 403-4 Selected Topics in Latin American Economy and Society (LAS)
- SA 404-4 Andean Society and Culture (LAS)
- SA 410-4 Advanced Topics in Power and the Regulation of Self and Others (S)
- SA 416-4 Sociology of Art Forms (S)
- SA 417-4 Contemporary Issues in Medical Sociology (S)
- SA 450-4 Advanced Sociological Theory (S)
- SA 497-4 Directed Readings in Sociology (S)
- SA 498-8 Field Study in Sociology and/or Anthropology (S or A)
- SA 499-4 Independent Project (S or A)

#### Courses in Sociology/Antropology (S or A)

These courses count as anthropology or sociology credit whenever they are completed.

- SA 302W-4 Global Problems and the Culture of Capitalism (S or A)
- SA 315-4 New Information Technology and Society (S or A)
- SA 316-4 Tourism and Social Policy (S or A)
- SA 340-4 Social Issues and Social Policy Analysis (S or A)
- SA 355-4 Quantitative Methods (S or A)
- SA 356W-4 Ethnography and Qualitative Methods (S or A)
- SA 357W-4 Survey Methods (S or A)
- SA 358-4 The Philosophy of the Social Sciences (S or A)
- SA 364-4 Urban Communities and Cultures (S or A)
- SA 386-4 The Ethnography of Politics (S or A)
- SA 392-4 Latin America (S or A)
- SA 418-4 International Health: Global Policies and Local Realities (S or A)
- SA 420-4 Sociology of Aging (S or A)
- SA 429-4 Sex, Work, and International Capital (S or A)
- SA 430-4 States, Cultures and Global Transitions (S or A)
- SA 447-4 Selected Issues in Social Policy Analysis (S or A)
- SA 498-4 Field Study in Sociology and/or Anthropology (S or A)
- SA 499-4 Independent Project (S or A)

#### Courses in Sociology/Antropology (S or A)

These courses may count as anthropology or sociology credit depending on the content of the course in the semester it is taught. See the departmental Advisor.

- SA 326-4 Ecology and Social Thought (S or A)
- SA 345-4 Race, Immigration and the Canadian State (S or A)

- SA 360-4 Special Topics in Sociology and Anthropology (S or A)
- SA 363-4 Process of Development and Underdevelopment (S or A)
- SA 371-4 The Environment and Society (S or A)
- SA 388-4 Comparative Studies of Minority Indigenous Peoples (S or A)
- SA 396-4 Selected Regional Areas (S or A)
- SA 455-4 Special Topics in Applied Social Research (S or A)
- SA 460-4 Special Topics in Sociology and Anthropology (S or A)
- SA 463-4 Special Topics in Development Studies (S or A)

Theory and methods requirements should be completed early in the upper division. Students are strongly urged to balance theory courses with methods courses over the required minimum.

#### Anthropology Major Program

Students complete 32 upper division units including

- SA 301-4 Contemporary Ethnography (A)
- SA 356W-4 Ethnography and Qualitative Methods (S or A)
- SA 402-4 The Practice of Anthropology (A)

plus eight upper division units chosen from the Calendar list of anthropology (A) courses.

plus an additional 12 upper division units chosen from the Calendar list of anthropology (A), sociology (S), or sociology and anthropology (S or A).

#### Sociology Major Program

Students complete 32 units in upper division SA courses, including

- SA 350-4 Classical Sociological Thought (S)

and one of

- POL 315-4 Quantitative Methods in Political Science
- SA 355-4 Quantitative Methods (S or A)

and one of

- SA 356W-4 Ethnography and Qualitative Methods (S or A)
- SA 357W-4 Survey Methods (S or A)

An additional 20 upper division units are required, to be chosen from any SA or S course. Courses designated S are highly recommended.

## Joint Major Programs

### Archaeology and Anthropology Joint Major Program

Please see "Archaeology and Anthropology Joint Major Program" on page 93.

### Art and Culture Studies and Anthropology Joint Major Program

Please see "Anthropology or Sociology, and Art and Culture Studies Joint Major Program" on page 158.

### Art and Culture Studies and Sociology Joint Major Program

Please see "Anthropology or Sociology, and Art and Culture Studies Joint Major Program" on page 158.

### Sociology or Anthropology and Canadian Studies Joint Major Program

Please see "Joint Major Programs" on page 96.

### Anthropology and Sociology Joint Major Program

#### Lower Division Requirements

Refer to the *Major Programs – Lower Division Requirements* for the two discipline requirement specifications.

Students complete all of

- SA 100-4 Perspectives in Canadian Society (S or A)

SA 101-4 Introduction to Anthropology (A)  
 SA 150-4 Introduction to Sociology (S)  
 SA 201W-4 Anthropology and Contemporary Life (A)  
 SA 250-4 Introduction to Sociological Theory (S)  
 SA 255-4 Introduction to Social Research (SA)  
 STAT 203-3 Introduction to Statistics for Social Sciences

plus one additional 200 division course in anthropology and/or sociology.

**Note:** Students with equivalent post-secondary statistics courses are exempt from STAT 203. It is highly recommended that students complete SA 255 before completing STAT 203.

When choosing lower division courses, consider the prerequisites for upper division courses.

#### Upper Division Requirements

Students complete 40 units in upper division SA courses, including the following.

SA 301-4 Contemporary Ethnography (A)  
 SA 350-4 Classical Sociological Thought (S)  
 SA 356W-4 Ethnography and Qualitative Methods (S or A)  
 SA 402-4 The Practice of Anthropology (A)

plus one of  
 POL 315-4 Quantitative Methods in Political Science  
 SA 355-4 Quantitative Methods (S or A)

plus 20 additional upper division units chosen from the list of anthropology and/or sociology courses.

#### Sociology or Anthropology and Communication Joint Major Program

Sociology, anthropology and communications overlap in many concerns: nature, production, commodification, and politics of culture; communicative processes and social identity, class, gender, etc. This joint major is for those who share these common interests. A minimum 2.50 CGPA is required for entry and continuation in this program.

Students must fulfil lower and upper division requirements for both sociology and anthropology, as listed below.

#### Lower Division Anthropology Requirements

Students complete all of  
 SA 101-4 Introduction to Anthropology (A)  
 SA 201W-4 Anthropology and Contemporary Life (A)  
 SA 255-4 Introduction to Social Research

plus two additional 200 division courses in anthropology and/or sociology.

#### Lower Division Sociology Requirements

Students complete all of  
 SA 100-4 Perspectives on Canadian Society  
 SA 101-4 Introduction to Anthropology  
 SA 150-4 Introduction to Sociology  
 SA 250-4 Introduction to Sociological Theory  
 SA 255-4 Introduction to Social Research  
 STAT 203-3 Introduction to Statistics for the Social Sciences

#### Lower Division Communication Requirements

Students complete the following core courses.

CMNS 110-3 Introduction to Communication Studies  
 CMNS 130-3 Explorations in Mass Communication  
 Students complete at least six (6) CMNS 200 division courses, including at least two of  
 CMNS 260-3 Empirical Communication Research Methods  
 CMNS 261-3 Documentary Research in Communication  
 CMNS 262-3 Design and Method in Qualitative Communication Research

and at least one course from each area of concentration in communication (see below).

#### Media and Culture

CMNS 220, 221, 223 or 235

#### Technology and Society

CMNS 210, 253

#### Political Economy and Policy

CMNS 230 or 240

The remaining 200 division CMNS course(s) can be chosen from any area of concentration.

A grade of C- or better is mandatory in each of the required lower division CMNS courses.

#### Upper Division Anthropology Requirements

Students complete a minimum of 20 upper division units including.

SA 301-4 Contemporary Ethnography (A)  
 SA 356W-4 Ethnography and Qualitative Method (S or A)s

plus 12 additional upper division units chosen from the Calendar list of anthropology (A), or (S or A) courses when they are designated as anthropology.

#### Upper Division Sociology Requirements

Students complete a minimum of 20 upper division units in sociology or SA courses (five courses) which must include the following.

SA 350-4 Classical Sociological Thought

and one of  
 SA 355-4 Quantitative Methods  
 SA 356-4 Ethnography and Qualitative Methods

#### Upper Division Communication Requirements

Students complete a minimum of 24 upper division communication units. Directed study and field placement courses may not be used.

#### Sociology or Anthropology and Criminology Joint Major Program

These disciplines have some common methods and theoretical concerns; the relation between such variables as class, gender, ethnicity and crime; the social construction of deviance; the law as a social phenomenon; and the general social, political, and economic frameworks of society that condition the nature and perception of social problems. This program is for those who share these concerns.

Admission is contingent upon the enrolment limitation requirements of the School of Criminology. Application for admission must follow the general procedures established by the school.

A grade of 1.67 (C-) or better is required in all non-elective courses.

The department offers degrees in sociology or anthropology and a joint degree in sociology and anthropology. Students interested in a joint program in sociology or anthropology and criminology should contact both department advisors.

#### Anthropology Requirements

##### Lower Division Requirements

Students complete both of  
 SA 101-4 Introduction to Anthropology (A)  
 SA 201W-4 Anthropology and Contemporary Life (A)

plus one of  
 CRIM 220-3 Research Methods in Criminology  
 SA 255-4 Introduction to Social Research (SA)

plus three additional 200 division courses in anthropology and/or sociology.

##### Upper Division Requirements

Students complete a minimum of 20 upper division units including both of  
 SA 301-4 Contemporary Ethnography (A)  
 SA 356W-4 Qualitative Methods (S or A)

plus 12 additional upper division units chosen from the Calendar list of anthropology (A), or (S or A) courses when they are designated as anthropology. SA 402 is highly recommended.

#### Sociology Requirements

##### Lower Division Requirements

For the joint major in sociology and criminology, students must complete all of  
 SA 100-4 Perspectives on Canadian Society  
 SA 101-4 Introduction to Anthropology  
 SA 150-4 Introduction to Sociology  
 SA 250-4 Introduction to Sociological Theory  
 plus one of  
 CRIM 220-3 Research Methods in Criminology  
 SA 255-4 Introduction to Social Research  
 plus one additional 200 division sociology/anthropology (SA) or sociology (S) course.

##### Upper Division Requirements

Students complete a minimum of 20 upper division units including  
 SA 350-4 Classical Sociological Thought  
 SA 355-4 Quantitative Methods  
 SA 356-4 Ethnography and Qualitative Methods (SA)  
 plus eight upper division units from sociology/anthropology (SA) or sociology (S) courses

##### Highly Recommended

SA 304-4 Social Control

#### Criminology Requirements

For either the joint major in sociology and criminology, or in anthropology and criminology, students must complete the following criminology lower division requirements with a 2.25 CGPA.

All criminology lower division requirements must be completed before application, and before formal admittance to upper division criminology courses.

CRIM 369 or 462 may not be used for credit towards this joint major.

Students who withdraw from the joint major program and pursue a criminology major only will be required to complete additional course work consistent with the requirements for a major in criminology.

##### Lower Division Requirements

all of  
 CRIM 131-3 Introduction to the Criminal Justice System — A Total System Approach  
 CRIM 135-3 Introduction to Canadian Law and Legal Institutions: A Criminal Justice Perspective  
 CRIM 203-3 Historical Reactions to Crime and Deviance  
 CRIM 230-3 Criminal Law

plus all of  
 CRIM 101-3 Introduction to Criminology  
 CRIM 103-3 Psychological Explanations of Criminal and Deviant Behavior  
 CRIM 104-3 Sociological Explanations of Criminal and Deviant Behavior

plus one of  
 CRIM 220-3 Research Methods in Criminology\*  
 SA 255-4 Introduction to Social Research\*

plus one of  
 BUEC 232-3 Elementary Economic and Business Statistics I  
 PSYC 210-4 Introduction to Data Analysis in Psychology  
 STAT 100-3 Chance and Data Analysis  
 STAT 101-3 Introduction to Statistics  
 STAT 203-3 Introduction to Statistics for Social Sciences

\*Students who complete CRIM 220 must obtain, from the sociology/anthropology advisor, a waiver of the SA 255 prerequisite for SA 355 and 356 in advance of enrolling for these courses. Students who complete SA 255 must obtain, from the criminology advisor, a waiver of the CRIM 220 prerequisite for CRIM 320 in advance of enrolling for this course.

**Upper Division Requirements**

Students complete a minimum 20 units in criminology with a C- or better including

CRIM 300-3 Current Theories and Perspectives in Criminology  
CRIM 330-3 Criminal Procedure and Evidence  
CRIM 332-3 Sociology of Law

CRIM 369 and 462 are not permitted.

## **Sociology or Anthropology and Latin American Studies Joint Major Program**

**Lower Division Sociology Requirements**

SA 100-4 Perspectives on Canadian Society  
SA 101-4 Introduction to Anthropology  
SA 150-4 Introduction to Sociology  
SA 250-4 Introduction to Sociological Theory  
SA 255-4 Introduction to Social Research  
STAT 203-3 Introduction to Statistics for the Social Sciences

**Lower Division Anthropology Requirements**

Students complete all of  
SA 101-4 Introduction to Anthropology (A)  
SA 201W-4 Anthropology and Contemporary Life (A)  
SA 255-4 Introduction to Social Research (SA)  
plus three additional 200 division courses in anthropology and/or sociology.

**Upper Division Sociology Requirements**

Students complete 20 units in sociology or SA courses, which must include

SA 350-4 Classical Sociological Thought  
and one of  
SA 355-4 Quantitative Methods  
POL 315-4 Quantitative Methods in Political Science

and one of  
SA 356-4 Ethnography and Qualitative Methods  
SA 357-4 Survey Research

**Upper Division Anthropology Requirements**

Students complete a minimum of 20 upper division units including both of  
SA 301-4 Contemporary Ethnography (A)  
SA 356W-4 Ethnography and Qualitative Methods (S or A)

plus 12 additional upper division units chosen from the Calendar list of anthropology (A), or (S or A) courses when they are designated as anthropology. SA 402 is highly recommended.

## **Anthropology and Linguistics Joint Major Program**

For requirements, see "Linguistics and Anthropology Joint Major Program" on page 124.

## **Sociology or Anthropology and Women's Studies Joint Major Program**

For requirements, see "Sociology or Anthropology and Women's Studies Joint Major Program" on page 141.

## **Honors and Joint Honors Programs**

**Anthropology Honors Program**

In addition to the lower division requirements (see "Major Programs" on page 134), students must complete 52 units in upper division SA courses, 32 units of which must be in anthropology. The remaining 20 units can be completed with any upper division course in the department irrespective of discipline.

**Course Work Option**

Students who choose this option must complete 12 of the 52 upper division SA units at the 400 division (or above), and must include SA 451.

**Independent Project Option**

Students must complete eight of the 52 upper division SA units at the 400 division (or above), plus SA 499. Students who wish to pursue further independent research based on previous upper division work may enrol in SA 499 with prior undergraduate curriculum committee approval. Submit applications four weeks prior to the term in which SA 499 is to be completed and submit a proposal for a paper, a work plan, and confirmation of a faculty supervisor.

A cumulative grade point average (CGPA) of 3.5 in SA courses is required for admission to, and graduation from, the honors program.

Students must contact the advisor to declare their honors program.

**Theory Requirements**

Please see "Major Programs" on page 134. Theory requirements should be completed as early as possible in the upper division program.

**Methods Requirements**

Please see "Major Programs" on page 134. Methods requirements should be completed as early as possible in the upper division program.

**Note:** Students are strongly urged to balance theory courses with methods courses beyond the minimum.

**Sociology Honors Program**

In addition to the specified lower division requirements (see "Major Programs" on page 134), students must complete 52 units in upper division SA, 32 of which must be in sociology. The remaining 20 units can be completed with any upper division courses in the department irrespective of discipline.

**Course Work Option**

Students who choose this option must complete 12 of the 52 upper division SA units at the 400 division (or above), and must include SA 450.

**Independent Project Option**

Students must complete eight of the 52 upper division SA units at the 400 division (or above), plus SA 499. Students who wish to pursue further independent research based on previous upper division work may enrol in SA 499 with prior approval from the undergraduate curriculum committee. Applications should be submitted four weeks prior to the term in which SA 499 is to be completed. Students should submit a proposal for a paper, a work plan, and confirmation of a faculty supervisor.

A cumulative grade point average (CGPA) of 3.5 in SA courses is required for admission to, and graduation from, the honors program.

Students must contact the advisor to declare their honors program.

**Theory Requirements**

Please see "Major Programs" on page 134. Theory requirements should be completed as early as possible in the upper divisions.

**Methods Requirements**

Please see "Major Programs" on page 134. Methods requirements should be completed as early as possible in the upper division program.

**Note:** Students are strongly urged to balance theory courses with methods courses beyond the minimum.

## **Sociology and Anthropology Joint Honors Program**

In addition to the lower division requirements specified earlier (see "Major Programs" on page 134), students must complete 60 units in upper division SA courses, 32 units of which must be in one discipline, with the remaining 28 units in the other discipline.

**Course Work Option**

Students who choose this option must complete 12 of the 60 upper division SA units at the 400 division (or above), and must include either SA 450 or 451.

**Independent Project Option**

Students must complete eight of the 60 upper division SA units at the 400 division (or above), plus SA 499. Students who wish to pursue further independent research based on previous upper division work may enrol in SA 499 with prior approval from the undergraduate curriculum committee. Applications should be submitted four weeks prior to the term in which SA 499 is to be completed. Students should submit a proposal for a paper, a work plan, and confirmation of a faculty supervisor.

A cumulative grade point average (CGPA) of 3.5 in SA courses is required for admission to, and graduation from, the honors program.

Students must contact the advisor to declare their honors program.

**Theory Requirements**

Please see "Major Programs" on page 134. Theory requirements should be completed early in the upper division program.

**Methods Requirements**

Please see "Major Programs" on page 134. Theory requirements should be completed early in the upper division program.

**Note:** Students are strongly urged to balance theory courses with methods courses beyond the minimum.

## **Sociology or Anthropology and Canadian Studies Joint Honors Program**

See "Joint Honors Program" on page 96.

## **Minor Programs**

**Anthropology Minor Program****Lower Division Requirements**

Students complete these 12 lower division units.

SA 101-4 Introduction to Anthropology  
SA 201W-4 Anthropology and Contemporary Life  
SA 255-4 Introduction to Social Research\*

\*other courses may substitute for SA 255 upon the advice and with permission of the department advisor.

**Note:** unassigned transfer credit (SA XXX-3) cannot be used instead of SA 101 or 201.

**Upper Division Requirements**

Students complete 15 upper division units including  
SA 301-4 Contemporary Ethnography  
SA 356W-4 Ethnography and Qualitative Methods

The balance of this requirement must be fulfilled from the list of upper division anthropology (A) courses.

**Sociology Minor Program****Lower Division Requirements**

Students complete 12 lower division units, of which eight must be in sociology (S). The remaining may be in S, A, or SA.

**Upper Division Requirements**

Students complete a minimum of 15 upper division units, all of which must be sociology (S) designated courses, or sociology or anthropology (S or A) courses when designated as sociology. No anthropology (A) courses will be allowed.

**Extended Minor Program**

An extended minor consists of lower division requirements for a major and upper division requirements for a minor. Other criteria may be set by individual departments. A student's program must be approved by the extended minor program advisor.



## Certificate Programs

### Certificate in Ethnic and Intercultural Relations

This interdisciplinary program is for those planning to work in multicultural or cross-cultural settings. In today's increasingly interdependent world, the need for critical understanding of ethnicity and social justice has been acknowledged by educators, community workers and other professionals. In response, the program explores causes of unequal treatment, to compare social justice issues internationally, and to develop strategies for social change.

The program is for both general students and those interested in working with human service professionals (social workers, educators, police, counsellors, personnel managers, health practitioners or civil servants) who are required to interact effectively with people from a variety of cultural and linguistic backgrounds to foster better understanding of the multi-ethnic society in which we live and work.

Day and evening courses are offered at the Burnaby campus and at Simon Fraser University Vancouver. Some are available through Distance Education.

#### Program Objectives

Program participation enables students to develop:

- critical perspectives on current debates about racism, equality and social justice
- a clearer understanding of the concept of diversity as it relates to hierarchical structuring of differences
- knowledge based on immigration, citizenship and civil rights
- skills that will prepare you for professional work or further academic study in the field.

#### Program Requirements

Students must successfully complete 30 units comprised of 12 required units, and the remaining chosen from two sets of specified electives. These courses, which include both lower and upper division courses, provide critical and interdisciplinary material.

A minimum 2.50 GPA calculated on the designated courses for the certificate is required. Duplicate courses will be counted only once.

#### Core Courses

POL 481-4 Identity Politics  
SA 203-4 Violence in War and Peace  
SA 345-4 Race, Immigration and the Canadian State\*  
SA 386-4 The Ethnography of Politics

#### Elective Courses

Students complete a minimum of 10 units from the following

ASC 101-3 Introduction to Asia-Canada Studies I  
CRIM 335-3 Human Rights and Civil Liberties  
CRIM 311-3 Minorities and the Criminal Justice System\*  
HIST 326-4 The History of Aboriginal Peoples of North America Since 1850  
SA 255-4 Introduction to Social Research  
SA 286-4 Aboriginal Peoples and British Columbia: Introduction  
SA 319-4 Culture Ethnicity and Aging  
SA 340-4 Social Issues and Social Policy Analysis  
WS 200-3 Women in Cross Cultural Perspective

#### Optional Courses

To fulfil the remaining eight units, students choose from the following list *when content is applicable to multicultural issues*. Consult with the department.

CMNS 447-4 Negotiations and Dialogue as Communication  
CRIM 419-3 Indigenous Peoples, Crime, and Criminal Justice  
EDUC 441-4 Multicultural and Anti-racist Education  
GEOG 102-3 World Problems in Geographical Perspective  
GEOG 420-4 Comparative Cultural Geography

HIST 424-4 Problems in the Cultural History of Canada  
POL 320-4 Canada and Latin America  
SA 402-4 The Practice of Anthropology  
WS 309-4 Gender and International Development

\*available through the Centre for Distance Education

Subject to steering committee approval, students may substitute relevant special topics or related courses.

**Note:** it is the student's responsibility to ensure completion of prerequisites and other department requirements before choosing elective courses.

### Certificate in Family Studies

This program studies families from an interdisciplinary perspective. Students gain an understanding of psychology, sociology, gerontology and health. Students may supplement core courses with electives in relevant disciplines such as communications, education, history, and women's studies.

#### Admission Requirements

In addition to normal University admission requirements, students must complete PSYC 100, 102, and SA 150 prior to formal program admission. GERO 300 is highly recommended. Students can be admitted under regular or special entry requirements.

#### Program Requirements

- successful completion of 30 units, of which 14 are earned by completing four required core courses. The remaining 16 units are selected from a set of three courses from which the students select one, and 12 units of elective credit. Some have prerequisites that are not included in the certificate program.
- minimum 2.25 GPA calculated on courses applied to the certificate. Duplicate courses are counted once.
- completion of the certificate normally within five years of admission to the certificate program.

#### Core Courses (18 units)

GERO 408-4 Families over the Life Course  
PSYC 250-3 Introduction to Developmental Psychology  
SA 231-4 Sociology of Families

and one of  
KIN 110-3 Human Nutrition: Current Issues  
KIN 140-3 Contemporary Health Issues

and one of\*  
SA 331-4 Politics of the Family  
SA 332-4 Anthropology of Childhood

\*If students choose more than one of these courses, it/they may be applied to their elective courses.

#### Elective Courses (12 units)

Students complete 12 units from the following.  
CMNS 320-4 Children, Media and Culture  
CRIM 210-3 Law, Youth and Young Offenders  
HIST 329-4 Canadian Family History  
PSYC 355-3 Adolescent Development  
PSYC 357-3 Adulthood and Aging  
SA 319-4 Culture, Ethnicity and Aging  
SA 335-4 Gender Relations and Social Issues  
SA 340-4 Social Issues and Social Policy Analysis  
SA 496-4 Directed Readings in Anthropology (or SA 497)

WS 200-3 Women in Cross-Cultural Perspective

To develop research skills, students may select the following as electives.

PSYC 210-4 Introduction to Data Analysis in Psychology  
SA 255-4 Introduction to Social Research

#### Transfer Credit

Up to 14 units assigned to specific courses may be transferred to the certificate, subject to University transfer credit regulations and the co-ordinator's approval. Normally, required upper division core courses will be completed at Simon Fraser University.

## Post Baccalaureate Diploma Program

### Post Baccalaureate Diploma in Social Policy Issues

This program, for those with a bachelor's degree, may be completed through a combination of courses offered through distance education, at the Burnaby and the downtown campuses. The program applies recent developments in social theory and research methods to the investigation of social programs and social policy issues. Courses examine substantive social policy issues. The program provides critical perspectives to understand processes by which social problems are defined, understood, and acted upon.

For the program's general regulations, see "Post Baccalaureate Diploma Program" on page 7.

#### Program Requirements

Students must successfully complete an approved program comprised of 30 units of third and fourth year courses. At least 16 are to be chosen from the set of core courses described below.

#### Core Courses

Students complete at least four of the following courses, one of which must be SA 340.

SA 316-4 Tourism and Social Policy  
SA 319-4 Culture, Ethnicity, and Aging  
SA 320-4 Population and Society  
SA 333-4 Schooling and Society  
SA 335-4 Gender Relations and Social Issues  
SA 340-4 Social Issues and Social Policy Analysis  
SA 363-4 Processes of Development and Underdevelopment  
SA 386-4 The Ethnography of Politics  
SA 420-4 Sociology of Aging

#### Optional Courses

An additional four courses from the following list would complete the requirements for the program.

POL 321-4 The Canadian Federal System  
POL 352-4 Canadian Local and Urban Government and Politics  
POL 451-4 Public Policy Analysis  
SA 300-4 Canadian Social Structure  
SA 304-4 Social Control  
SA 321-4 Social Movements  
SA 325-4 Political Sociology  
SA 362-4 Society and the Changing Global Division of Labor  
SA 371-4 Environment and Society  
SA 402-4 The Practice of Anthropology  
SA 463-4 Special Topics in Development Studies

To fulfil the optional course requirement, students may instead complete additional core courses, or upon the program steering committee's recommendation, select a course not included among listed options, but with appropriate content.

Acceptance of general Simon Fraser University admission does not automatically guarantee program admission. Students must apply for entry directly to the Department of Sociology and Anthropology.

## Co-operative Education

This program provides practical social sciences experience and entails planned study terms and employment in an area of the student's choice.

### Requirements

To be admitted, students must have completed 29 units with a minimum 2.75 CGPA.

Prior to admission, students must complete all of  
SA 101-4 Introduction to Anthropology  
SA 150-4 Introduction to Sociology  
SA 255-4 Introduction to Social Research

and one of

SA 201-4 Anthropology of Contemporary Life  
SA 250-4 Introduction to Sociological Theory

plus one additional 200 division SA course

College transfer students must complete at least 15 Simon Fraser University units for admission eligibility, and must satisfy the above requirements or equivalents. College transfer students who participated in co-op programs elsewhere may be credited with term(s) already completed but applicability depends on the department's evaluation.

Work terms are made through the Faculty of Arts and Social Sciences and department co-op co-ordinators. For program continuance, a minimum 2.75 cumulative GPA is required. See "Co-operative Education" on page 212 or contact the department.

## Statistics Program

TLX10545 Shrum Science Centre, 778.782.3803 Tel,  
778.782.4368 Fax, [www.stat.sfu.ca](http://www.stat.sfu.ca), [stat@sfu.ca](mailto:stat@sfu.ca)

*Chair of Statistics and Actuarial Science*  
R.A. Lockhart BSc (Br Col), MA, PhD (Calif)

*Professor Emeritus*

M.A. Stephens BSc (Brist), AM (Harv), PhD (Tor)

*Associate Members within Department of Statistics and Actuarial Science*

R. Altman

D. Bingham

D.A. Campbell

J. Cao

C.B. Dean

J. Graham

J. Hu

R.A. Lockhart

T.M. Loughin

Y. Lu

B. McNeney

G. Parker

R.D. Routledge

C. Schwartz

T.B. Swartz

B. Tang

S. Thompson

C. Tsai

L. Zeng\*

*Senior Lecturer*

R. Insley BSc, MSc (Br Col)

\*joint appointment with health sciences

The program maintains a committee of advisors whose office hours are available at the general office and at [www.stat.sfu.ca](http://www.stat.sfu.ca). Students pursuing a major should seek advice early in their academic career.

A program within the Faculty of Arts and Social Sciences leading to a bachelor of arts with a major or honors in statistics is offered. Students interested in a bachelor of science degree in statistics should see "Department of Statistics and Actuarial Science" on page 206 in the *Faculty of Science* section.

The program trains students, not only in large data sets analysis, but also in the design and analysis of scientific experiments and sample surveys. These techniques are applied in a broad field range. To appreciate their application, students gain advanced training in an area of potential application by completing a minor in a field other than statistics. There are no other restrictions on the selection of a minor. Students are encouraged to discuss their minor selection with an advisor early in their program.

The following related programs may also be of interest: mathematics and computing science (page 199), management and systems science (page 195).

### Admission Requirements

For major or honors admission, an average B- grade in at least two approved Simon Fraser University STAT courses is required. Visit [www.stat.sfu.ca/programmes/statistics/admission](http://www.stat.sfu.ca/programmes/statistics/admission) for policy details.

### Other Requirements

#### Faculty of Arts and Social Sciences Requirements

Students planning a bachelor of arts with a statistics major or honors must satisfy the Faculty of Arts and Social Sciences requirements.

#### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

#### Courses for Further Credit

No student may complete, for further credit, any course offered by the Department of Statistics and Actuarial Science which is a prerequisite for a course that the student has already completed with a grade of C- or higher without permission of the department.

#### Computing Recommendation

Experience with a high level programming language is recommended by the start of the second year.

#### Non-specialist STAT Courses

The following courses are intended to be particularly accessible to students who are not specializing in statistics: STAT 100, 101, 201, 203, 302, 403. See "Statistics STAT" on page 446 for course descriptions and associated course information.

#### Open Workshops

Some introductory and service courses are organized through the department's open workshops. In addition to regularly scheduled lectures, students enrolled in STAT 100, 101, 201, 203, 270 and 302 are encouraged to come to the workshops for assistance anytime during posted hours to meet with the co-ordinator, teaching assistants and students, and to work together to understand statistics in a friendly and helpful environment. The statistics workshop is held in K9516 Shrum Science Centre (inside K9510).

#### Beginning Level Requirements in Statistics

Students who are considering enrolment in a statistics course and do not have BC high school math 11 (or equivalent), must see the basic math workshop co-ordinator, and may complete the non-credit basic algebra course offered by the Department of Mathematics. Those who are unsure of their level of preparation are strongly encouraged to complete the free math assessment test at the basic math workshop located in K9505 or at Simon Fraser University Vancouver. Be sure to discuss the test results with the workshop lab instructor, or designate.

#### Prerequisite Grade Requirement

Students must have a grade of C- or better in prerequisites for STAT courses offered by the Department of Statistics and Actuarial Science.

#### GPA Required for Continuation

To continue in the Statistics Program, students must maintain at least a 2.25 grade point average in MATH, STAT or ACMA courses.

#### Credit for Statistics Courses

Credit for STAT courses depends on the order in which the courses are completed. There are three kinds of courses:

- introductory course STAT 100
- service courses STAT 101, 201, 203, 301, 302, 403
- mainstream courses STAT 270, 285, 300, 330, 350, 380, 400, 410, 430, 450, 460

Once a service or mainstream course is completed, credit may not be obtained for STAT 100. Once a mainstream course is completed, credit may not be obtained for any service course. An except is that both STAT 302 and 403 may be completed for credit after completing STAT 270.

### Accreditation of Courses

The Statistical Society of Canada has accredited certain courses as being available for partial fulfilment of the educational requirements for the associate statistician (AStat) designation. The accredited courses list is available at [www.ssc.ca/accreditation/index\\_e.html](http://www.ssc.ca/accreditation/index_e.html). Please contact the department for details. Further information on the professional statistician (PStat) and associate statistician (AStat) designation is available at [www.ssc.ca](http://www.ssc.ca).

### Major Program

A major in statistics requires 120 units, of which at least 65 must be within the Faculty of Arts and Social Sciences and the Department of Statistics and Actuarial Science. Please see "Bachelor of Arts Program" on page 88 for general regulations, breadth requirements, upper division credit, etc.

Students must obtain credit for the following.

### Lower Division Requirements

#### Mathematics

Students complete one of  
MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences  
MATH 157-3 Calculus for the Social Sciences I

plus one of  
MATH 152-3 Calculus II  
MATH 155-3 Calculus II for the Biological Sciences  
MATH 158-3 Calculus for the Social Sciences II

plus one of  
MATH 232-3 Applied Linear Algebra  
MATH 240-3 Algebra I: Linear Algebra

and  
MATH 251-3 Calculus III

#### Statistics

Students complete both of  
STAT 270-3 Introduction to Probability and Statistics  
STAT 285-3 Intermediate Probability and Statistics

#### Computing Science

Students complete one of  
CMPT 125-3 Introduction to Computing Science and Programming II  
CMPT 126-3 Introduction to Computer Science and Programming

### Upper Division Requirements

#### Probability and Statistics

Students complete all of  
STAT 330-3 Introduction to Statistical Inference  
STAT 350-3 Linear Models in Applied Statistics  
STAT 402-3 Generalized Linear and Nonlinear Modelling  
STAT 410-3 Statistical Analysis of Sample Surveys  
STAT 430-3 Statistical Design and Analysis of Experiments  
STAT 450-3 Statistical Theory

plus four additional upper division ACMA, MACM, MATH or STAT courses excluding STAT 301, 302 and 403. Consult an advisor before selecting these courses. It is recommended that these four additional upper division courses be selected from STAT 300, 380, 400, 460, 490, 495 and MACM 316. Honors students may not overlap these four with those used to satisfy the *Additional Mathematics Requirements* and the *Additional Statistics Requirements* as shown in the honors program below.

## Minor Program Requirements

Students are required to complete a minor in a discipline other than statistics. The certificate in actuarial mathematics may fulfil this requirement.

## Honors Program

This bachelor of arts program requires 132 units, of which at least 65 must be within the Faculty of Arts and Social Sciences and Department of Statistics and Actuarial Science. See "Bachelor of Arts Program" on page 88 for general regulations, breadth requirements, upper division credit and other requirements. In addition to the requirements for a major, candidates must obtain credit for the following.

## Additional Mathematics Requirements

Students complete all of  
MATH 242-3 Introduction to Analysis  
MATH 320-3 Advanced Calculus of One Variable  
MATH 322-3 Complex Variables  
plus one of  
MATH 338-3 Advanced Linear Algebra  
MATH 340-3 Algebra II: Rings and Fields  
MATH 341-3 Algebra III: Groups

## Additional Statistics Requirements

Students complete both of  
STAT 380-3 Introduction to Stochastic Processes  
STAT 460-3 Decision Analysis and Bayesian Inference

## Minor Program

Statistics minor program requirements are listed in *Department of Statistics and Actuarial Science* (page 206) in the *Faculty of Science* section.

## Extended Minor Program

An extended minor comprises the lower division requirements for a major plus the upper division requirements for a minor. At least seven upper division units counted toward this requirement must be completed at Simon Fraser University.

## Co-operative Education

This program integrates work experience with academic study. See "Co-operative Education" on page 212. Consult with the science and environment co-op co-ordinator Mr. E. Simons at [esimons@sfu.ca](mailto:esimons@sfu.ca).

# Department of Women's Studies

5102A Academic Quadrangle, 778.782.3333 Tel,  
778.782.5518 Fax, [www.sfu.ca/womens-studies](http://www.sfu.ca/womens-studies)

### Chair

(to be announced)

### Professors Emeriti

M. Kimball BA (Macalester), PhD (Mich)\*\*\*  
A. Lebowitz BA (New Rochelle), MA (Wis)  
M.A. MacDonald BEd (Qu), BSc (MtAll), PhD (WOnt)  
S. Wendell BA (NY State), PhD (Br Col)

### Professors

M. Griffin Cohen BA (Iowa Wesleyan), MA (NY State), PhD (York, Can)\*\*  
C.K. Patton BA (Appalachian State), MTS (Harvard), PhD (Mass), Canada Research Chair\*\*\*\*  
M.L. Stewart BA (Calg), MA, PhD (Col)

### Associate Professors

J. Levitin BA, MA (Wash), PhD (NY State)\*  
H. Zaman BA (Dhaka), MA, PhD (Manit)

### Assistant Professors

L. Campbell BA (McM), MA (Tor), PhD (Qu)  
A. Cooper BA, MA, PhD (Tor), Ruth Wynn Woodward Chair  
H. Leung BA (Oxf), MA, PhD (Wisc)

### Associate Members

M. Bubber, Library  
B. Burtch, School of Criminology  
E. Chénier, Department of History  
P. Dossa, Department of Sociology and Anthropology  
O.A. Hankivsky, Public Policy Program  
J. Marchbank, Explorations in the Arts and Social Sciences  
J. Matsumura, Department of History  
K. Mezei, Department of English  
M.H. Morrow, Faculty of Health Sciences  
D.H. Reeder, Department of English, First Nations Studies Program  
L. Shapiro, Department of Philosophy  
J. Spear, Department of History  
A. Travers, Department of Sociology and Anthropology

### Advisor

Ms. R. Neilson BA (S Fraser), 5103 Academic Quadrangle, 778.782.3593, [wsda@sfu.ca](mailto:wsda@sfu.ca)

\*joint appointment with contemporary arts

\*\*joint appointment with political science

\*\*\*joint appointment with psychology

\*\*\*\*joint appointment with sociology and anthropology

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information. For the faculty's requirements, see "Writing, Quantitative, and Breadth Requirements" on page 88.

## Major Program

### Lower Division Requirements

Students complete 12 lower division units in women's studies including both of

WS 101-3 Introduction to Women's Issues in Canada  
WS 102-3 Introduction to Western Feminisms

and one of

WS 207-3 Introduction to Feminist Theory  
WS 208-3 Researching Women's Issues: How Do We Do What We Do?

### Upper Division Requirements

Students complete 32 upper division units in women's studies. Students may substitute up to eight units of upper division credit offered by other departments and approved by women's studies.

## Gender Studies Minor Program

This minor, which may be completed with any major program, offers opportunities to integrate understanding of gender relations in society and culture.

Students complete 24 units comprising nine lower and 15 upper division units, with one lower division core course (GDST 200) required of all minors. For the remaining required units needed to complete the minor, students can apply units from regularly offered courses listed below, or from a list of designated courses that is posted in the department.

It is the student's responsibility to ensure completion of prerequisite and other department requirements before choosing elective courses.

Students planning a minor in gender studies should consult with the women's studies advisor about course selection at their earliest opportunity.

## Lower Division Requirements

Students complete

GDST 200-3 Thinking About Gender

plus two of

CRIM 213-3 Introduction to Women and Criminal Justice

CRIM 231-3 Introduction to the Judicial Process

SA 100-4 Perspectives on Canadian Society

SA 286-4 Aboriginal Peoples and British Columbia: Introduction

## Upper Division Requirements

Students complete 15 upper division units selected from the following list and a list of designated courses that is posted in the women's studies department.

If in doubt about your eligibility to enrol in a particular upper division course, contact the undergraduate advisor in the appropriate department well in advance of any attempt to enrol.

CMNS 455-4 Women and New Information Technologies

CRIM 333-3 Women, Law and the State

CRIM 432-3 Gender in the Courts and the Legal System

ENGL 486-4 Topics in Gender, Sexuality and Literature

FPA 313-5 Arts, Audience, Patronage, Institutions

GDST 300-4 Mapping Masculinities

GDST 301-4 Queer Genders

GEOG 387-4 Geography and Gender

HIST 411-4 Class and Gender in European History

HIST 425-4 Gender and History

HIST 454-4 Gender and Sexuality in US History

SA 318-4 The Anthropology of Medicine

SA 331-4 Politics of the Family

SA 335-4 Gender Relations and Social Issues

SA 429-4 Sex, Work and International Capital

SA 435-4 Gender, Colonialism and Post-Colonialism

SA 486-4 Aboriginal Peoples and British Columbia

WS 309-4 Gender and Development

WS 314-4 Race, Class and Gender Relations

WS 315-4 Gender, War and Health

WS 323-4 Latin American Women in Literature and Society

WS 399-4 Numeracy, Gender and Cultures

## Women's Studies Minor Program

A women's studies minor may be completed with any major or honors bachelor's degree, or with a bachelor of general studies. The program offers students the maximum opportunity to integrate their understanding of the role of women in their society and culture.

### Lower Division Requirements

Students complete nine lower division units in women's studies including WS 101 and 102 or approved equivalents.

### Upper Division Requirements

Students complete 16 upper division units in women's studies. Those pursuing a minor normally fulfil lower division requirements before enrolling in 400 division courses, except with permission of the department.

Additional courses in various departments are designated for inclusion in the minor. A list is available from the department. Other courses which may have high women's studies content will be considered for credit toward the minor upon application. Only five units of designated courses will count toward the minor. Candidates for a history honors or major may count either or both of WS 201 and 202 toward the 18 lower division history units that are required.

## Extended Minor Program

An extended minor consists of the lower division major requirements and the upper division minor requirements in a subject area. See "Extended Minor Program" on page 89 for further details.

## Criminology and Women's Studies Joint Major Program

### Advisors

Ms. M. McIlroy, School of Criminology, 2644 Diamond Building, 778.782.3645

Ms. R. Neilson BA (S Fraser), Department of Women's Studies, 5103 Academic Quadrangle, 778.782.3593

### Program Requirements

Interested students should contact advisors in both the School of Criminology and the Department of Women's Studies.

To be admitted, students must satisfy admission requirements for both departments (refer to those Calendar sections). The School of Criminology must approve the student's admission before the student will be approved by women's studies.

To continue in this program, students must maintain a cumulative 2.25 GPA and cannot enrol in upper division CRIM courses with a CGPA of less than that. However, a student whose CGPA is between 2.00 and 2.25 may be eligible to apply for admission to the Department of Women's Studies major program.

### Lower Division Requirements

#### Criminology

All criminology lower division requirements must be completed with a cumulative GPA of not less than 2.25 before applying to the school for program acceptance, and before admittance is granted to undertake the upper division criminology courses. A C- grade or better is required in all required courses.

Students complete a minimum 60 units including all of  
 CRIM 101-3 Introduction to Criminology  
 CRIM 103-3 Psychological Explanations of Criminal and Deviant Behavior  
 CRIM 104-3 Sociological Explanations of Criminal and Deviant Behavior  
 CRIM 131-3 Introduction to the Criminal Justice System — A Total System Approach  
 CRIM 135-3 Introduction to Canadian Law and Legal Institutions: A Criminal Justice Perspective  
 CRIM 213-3 Introduction to Women and Criminal Justice  
 CRIM 220-3 Research Methods in Criminology  
 CRIM 230-3 Criminal Law  
 SA 150-4 Introduction to Sociology

plus one of

PHIL 001-3 Critical Thinking  
 PHIL 100-3 Knowledge and Reality  
 PHIL 110-3 Introduction to Logic and Reasoning  
 PHIL 120-3 Introduction to Moral Philosophy  
 PHIL 150-3 History of Philosophy I  
 PHIL 151-3 History of Philosophy II

PHIL 220-3 Introduction to Social and Political Philosophy

PHIL 244-3 Introduction to the Philosophy of Natural and Social Science

PHIL 280-3 Introduction to Existentialism

plus one of

POL 100-3 Introduction to Politics and Government  
 POL 151-3 The Administration of Justice

plus both of

PSYC 100-3 Introduction to Psychology I  
 PSYC 102-3 Introduction to Psychology II

plus one of

STAT 100-3 Chance and Data Analysis  
 STAT 101-3 Introduction to Statistics  
 STAT 203-3 Introduction to Statistics for Social Sciences

### Women's Studies

Students complete 15 lower division units in women's studies including both of

WS 101-3 Introduction to Women's Issues in Canada  
 WS 102-3 Introduction to Western Feminisms

and one of

WS 207-3 Introduction to Feminist Theory  
 WS 208-3 Feminist Research Methods

### Upper Division Requirements

#### Criminology

Students complete a minimum of 25 upper division units in criminology with a minimum CGPA of 2.25 including all of

CRIM 300-3 Current Theories and Perspectives in Criminology  
 CRIM 320-5 Quantitative Research Methods in Criminology  
 CRIM 330-3 Criminal Procedure and Evidence  
 CRIM 333-3 Women, Law and the State  
 CRIM 432-3 Gender in the Courts and the Legal Profession

**Note:** Students in this joint major program are not permitted to complete CRIM 369 nor 462.

The remaining required units may be selected at the student's discretion. Faculty of Arts and Social Sciences breadth requirements must be completed so general electives should be considered for that purpose.

### Women's Studies

Students complete a minimum of 20 upper division units in Women's Studies.

The special topics course WS 303-4 is recommended when offered as Women and the Law.

Exceptionally and only with the permission of the department, one course of designated women's studies credit offered by another department may be substituted for one course.

## English and Women's Studies Joint Major Program

### Advisors

Ms. K. Ward, Department of English, 6133 Academic Quadrangle, 778.782.4835

Ms. R. Neilson BA (S Fraser), Department of Women's Studies, 5103 Academic Quadrangle, 778.782.3593

This inter-departmental program explores various relationships between English literature and women's studies. Interested students must plan their program in consultation with both department advisors, and should consult *Guidelines for Course Selection* available from each department.

### Lower Division Requirements

#### English Requirements

Students complete the lower division requirements of the English major program.

#### Women's Studies Requirements

Students complete 15 lower division units in women's studies including both of

WS 101-3 Introduction to Women's Issues in Canada  
 WS 102-3 Introduction to Western Feminisms

and one of

WS 207-3 Introduction to Feminist Theory  
 WS 208-3 Feminist Research Methods

### Upper Division Requirements

#### English Requirements

Students complete 20 upper division English units. One course must come from ENGL 300, 304, 306, 310, 311, 313, 320, 322; and one from ENGL 354, 357, 359. Four units must be at the 400 division, excluding directed studies courses (ENGL 441, 442, 443 and 444).

#### Women's Studies Requirements

Students complete 20 upper division units in women's studies including two of

WS 304-4 Women and Religion  
 WS 305-4 Conceiving Creativity  
 WS 306-4 Women's Autobiographies, Memoirs and Journals  
 WS 313-4 Women and the Environment

The remaining units are from 300 and 400 division WS courses. Exceptionally and only with department permission, a maximum of one course of designated women's studies credit offered by another department may substitute for one WS course. The remaining upper division units are at the student's discretion.

## History and Women's Studies Joint Major Program

### Advisors

Mrs. T. Wright BA (S Fraser), Department of History, 6026 Academic Quadrangle, 778.782.4429

Ms. R. Neilson BA (S Fraser), Department of Women's Studies, 5105 Academic Quadrangle, 778.782.3593

This inter-department program explores the relationship between history and women's studies. Interested students must plan their program in consultation with the advisors in each department.

### Lower Division Requirements

#### Women's Studies

Students complete 15 lower division units in women's studies including all of

WS 101-3 Introduction to Women's Issues in Canada  
 WS 102-3 Introduction to Western Feminisms  
 WS 201-3 Colonizing Women: Canadian Women in Historical Perspective, 1600-1870s  
 WS 202-3 Modernizing Women: Canadian Women in Historical Perspective, 1870s-1970s

and one of

WS 207-3 Introduction to Feminist Theory  
 WS 208-3 Feminist Research Methods

### History

Students complete 18 units in 100 and 200 division history courses, including at least six units in 100 division history courses.

### Upper Division Requirements

#### Women's Studies

Students complete 20 upper division WS units.

### History

Students complete 24 units of 300 and 400 division history courses, of which 12 units must be in 400 division courses. Students complete at least two from any two groups, and at least one from the remaining group. For a description of the groups, see page 116.

## Humanities and Women's Studies Joint Major Program

### Advisors

Ms. C. Prislard, Department of Humanities, 5114 Academic Quadrangle, 778.782.4094

Ms. R. Neilson BA (S Fraser), Department of Women's Studies, 5103 Academic Quadrangle, 778.782.3593

This inter-department program explores relationships between humanities and women's studies. Students plan their program with advisors in each department.

### Lower Division Requirements

#### Women's Studies

Students complete 15 lower division units in women's studies including both of

WS 101-3 Introduction to Women's Issues in Canada  
WS 102-3 Introduction to Western Feminisms

and one of

WS 207-3 Introduction to Feminist Theory  
WS 208-3 Feminist Research Methods

#### Humanities

Students complete 15 units including  
HUM 101W-3 introduction to the Humanities

plus one of

HUM 102W-3 Classical Mythology  
HUM 105-3 Western Civilization from the Ancient  
World to the Reformation Era  
HUM 130-3 Introduction to Religious Studies

plus one of

HUM 201-3 Great Texts in the Humanities I  
HUM 202-3 Great Texts in the Humanities II  
HUM 203-3 Great Texts in the Humanities III

plus two further lower division humanities courses.

### Upper Division Requirements

#### Women's Studies

Students complete 20 upper division units in women's studies.

Exceptionally and only with permission of the department, one course of designated women's studies credit offered by another department may be substituted for one course.

#### Humanities

Students complete 22 units in upper division humanities courses which must include

HUM 495-2 Humanities Graduating Seminar

The following are recommended.

HUM 320-4 The Humanities and Philosophy  
HUM 321-4 The Humanities and Critical Thinking  
HUM 325-4 The Humanities and the Natural World

### Political Science and Women's Studies Joint Major Program

For requirements, see "Political Science and Women's Studies Joint Major Program" on page 131.

### Women's Studies and Psychology Joint Major Program

#### Advisors

Ms. T. Anbinder, Department of Psychology,  
5252 Robert C. Brown Hall, 778.782.3359

Ms. B. Davino, Department of Psychology,  
5249 Robert C. Brown Hall, 778.782.4840

Ms. R. Rogers BA (S Fraser), Department of  
Women's Studies, 5103 Academic Quadrangle,  
778.782.3593

Students are encouraged to consult advisors from both departments. This inter-departmental program explores relationships between psychology and women's studies. Joint major students (or prospective students) must plan their program in consultation with department advisors.

### Lower Division Requirements

#### Psychology

To be admitted to the major program, students must obtain a final course grade of C (2.0) or better in each of the following courses.

PSYC 100-3 Introduction to Psychology I  
PSYC 102-3 Introduction to Psychology II  
PSYC 201-4 Introduction to Research Methods in Psychology  
PSYC 207-3 Introduction to the History of Psychology  
PSYC 210-4 Introduction to Data Analysis in Psychology

**Note:** the above requirement applies to courses transferred from other institutions as well as to courses completed at Simon Fraser University.

Students must also complete two of

PSYC 221-3 Introduction to Cognitive Psychology  
PSYC 241-3 Introduction to Abnormal Psychology  
PSYC 250-3 Introduction to Developmental Psychology  
PSYC 260-3 Introduction to Social Psychology  
PSYC 268-3 Introduction to Law and Psychology  
PSYC 270-3 Introduction to Theories of Personality  
PSYC 280-3 Introduction to Biological Psychology

#### Women's Studies

Students complete 15 lower division units in women's studies including both of

WS 101-3 Introduction to Women's Issues in Canada  
WS 102-3 Introduction to Western Feminisms

and one of

WS 207-3 Introduction to Feminist Theory  
WS 208-3 Feminist Research Methods

### Upper Division Requirements

#### Psychology

Students complete 20 upper division psychology units. No more than three may be in directed studies. At least 11 upper division psychology units must be completed at Simon Fraser University.

#### Women's Studies

Students complete 20 upper division units in women's studies. Exceptionally and only with the permission of the department, one course of designated women's studies credit offered by another department may be substituted for one course.

### Sociology or Anthropology and Women's Studies Joint Major Program

#### Advisors

Ms. K. Payne, Department of Sociology and  
Anthropology, 5055 Academic Quadrangle,  
778.782.3726

Ms. R. Neilson BA (S Fraser), Department of  
Women's Studies, 5103 Academic Quadrangle,  
778.782.3593

The Departments of Sociology and Anthropology, and Women's Studies have common interests in women's issues and social sciences teaching and research. This joint major is for those who share these interests.

### Lower Division Requirements

#### Sociology

SA 101-4 Introduction to Anthropology  
SA 150-4 Introduction to Sociology  
SA 250-4 Introduction to Sociological Theory  
SA 255-4 Introduction to Social Research  
STAT 203-3 Introduction to Statistics for the Social Sciences

SA 231 is highly recommended.

#### Anthropology

Students complete all of

SA 101-4 Introduction to Anthropology  
SA 201W-4 Anthropology and Contemporary Life  
SA 255-4 Introduction to Social Research

plus two additional 200 division courses in anthropology and/or sociology

### Women's Studies

Students complete 15 lower division units in women's studies including all of

WS 101-3 Introduction to Women's Issues in Canada  
WS 102-3 Introduction to Western Feminisms  
WS 200-3 Women in Cross-Cultural Perspective

and one of

WS 207-3 Introduction to Feminist Theory  
WS 208-3 Feminist Research Methods

### Upper Division Requirements

#### Sociology

SA 350-4 Classical Sociological Thought  
SA 355-4 Quantitative Methods

Students must also complete an additional 12 units of upper division SA credit.

#### Anthropology Requirements

Students complete both of  
SA 301-4 Contemporary Ethnography  
SA 356W-4 Ethnography and Qualitative Methods

plus 12 additional upper division units chosen from the Calendar list of anthropology (A), or sociology or anthropology (S or A) courses when they are designated as anthropology

#### Women's Studies

Students complete 20 upper division women's studies units. Exceptionally and only with department permission, one course designated as women's studies credit offered by another department may be substituted for one WS course.

### Co-operative Education

This program is for qualified students to gain practical experience in women's studies. For admission, 30 units with a 3.0 CGPA, WS 101, 102, and two 200 division WS courses is required. Transfer students complete at least 15 Simon Fraser University units.

See "Co-operative Education" on page 212. Work term arrangements are made through the Faculty of Arts and Social Sciences co-op co-ordinator, who should be consulted at least one term in advance.

## World Literature Program

Simon Fraser University Surrey, Galleria 5, Central City, 250-13450 102nd Avenue, Surrey, BC V3T 0A3, 778.782.8731 Tel, [www.students.surrey.sfu.ca/worldliterature](http://www.students.surrey.sfu.ca/worldliterature), [worldlit-advisor@sfu.ca](mailto:worldlit-advisor@sfu.ca)

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P.L. Horta BA, MA (Br Col), MA (Qu), PhD (Tor)  
M. Ortatabi BA (Calif), MA, PhD (Wash)  
A. Yamini-Hamedani BA, MA, PhD (Calif)

#### Advisor

Ms. M. Yao BA (Br Col), 778.782.8478 Tel, [worldlit-advisor@sfu.ca](mailto:worldlit-advisor@sfu.ca)

\*joint appointment with explorations program

This bachelor of arts program focuses on writing from around the world, whether this is novels, essays, poetry, or prose, and whether traditional or experimental. World literature raises vital questions about cross-cultural understanding, translation as a creative and cultural enterprise, literature's role in history and society, and the nature of literature itself. Students will study historical, cultural, and theoretical approaches as well as the changing meanings of literature in translation. The major, minor, and honors programs examine literature in a comparative way,

emphasizing periods of cross-cultural contact and exchange. The language of instruction is English. The major and honors programs include language courses. Students are encouraged to study abroad.

## Major Program

This program consists of world literature (WL), history and language courses. Students are encouraged to complete 18 lower division WL units and three HIST units before proceeding to upper division world literature courses. (HIST 130 is recommended.) Students also complete nine units of language study in either the lower or upper division. Those who are multilingual can apply for a waiver of this requirement. Contact the student advisor for further information.

### Lower Division Requirements

Students complete 18 units including one of  
 WL 100-3 Introduction to World Literature  
 WL 101-3 Writing Global Migration  
 WL 102-3 Literature Across Cultures  
 and one of  
 WL 103-3 Pre-Modern World Literature  
 WL 104-3 Modern World Literature  
 plus  
 WL 200-3 Literary Analysis and Interpretation  
 and two of  
 WL 201-3 East/West  
 WL 202-3 North/South  
 WL 203-3 Selected Genres in World Literature  
 WL 204-3 Human Rights Literature  
 plus one additional three unit lower division course in world literature.

### Upper Division Requirements

Students complete a minimum of 31 upper division WL units including  
 WL 300-4 How Theory Travels  
 and any of  
 WL 301-4 Imperial Cultures  
 WL 302-4 Post-Imperial Cultures  
 WL 303-4 Global Culture and its Others  
 WL 304-4 Exiles and Émigrés  
 WL 305-4 Sages and Poets  
 and at least two of  
 WL 400-4 Literary Perspectives on Ancient Cultures  
 WL 401-4 Early Modernities

WL 402-4 Other Modernities  
 WL 403-3 After Modernities  
 WL 404-4 Literature in Translation  
 WL 410-4 Selected Topic in World Literature I  
 WL 420-4 Selected Topic in World Literature II  
 WL 430-4 Selected Topic in World Literature III  
 WL 440-4 Selected Topic in World Literature IV  
 WL 450-4 Directed Readings in Language and Literature

### Relevant Topic Courses

With prior approval, students may complete a maximum of three lower and eight upper division units of relevant topic courses from outside the program by submitting the course description to the advisor. The following pre-approved courses are appropriate.

ENGL 392-4 Studies in World Literatures in English  
 ENGL 492-4 Topics in World Literatures in English  
 FPA 341-3 World Music  
 FREN 342-4 Literature in Translation from the World  
 HUM 309-4 Literature and the Arts Across Cultures

### Study Abroad

Students are encouraged to study abroad, and may complete up to 15 upper division units at other universities or field schools with prior approval. Submit the relevant course description to the world literature advisor well in advance of the course.

## Honors Program

This program, for those who wish to study world literature beyond the major's course work, requires study in a language other than English and honors seminars of concentrated research and writing on a topic of their choice, with approval from the program.

To apply, students complete the same lower division requirements as the major, the language requirements, and 12 upper division units including WL 300. Applicants must have a minimum 3.0 grade point average (GPA). To complete the program, a minimum of 60 upper division units are required, with a minimum of 50 in world literature, and a 3.0 GPA.

### Language Requirements

In addition to the major program's nine units of language study, honors students also complete a minimum of three units of literature in a language other than English. This requirement may be fulfilled by completing a WL directed reading course (WL 450) or by completing an upper division course in another

Simon Fraser University department. With prior approval, this requirement may be met by completing an upper division course at another university.

## Upper Division Requirements

Students complete 50 upper division WL units by completing the same courses as the major program, excluding WL 450, (see above) plus the following.

WL 450-4 Directed Readings in Language and Literature  
 WL 480-4 Research Seminar for Honors Essay  
 WL 490-4 Honors Essay

### Relevant Topic Courses

With prior approval, students may complete a maximum of 12 upper division units of relevant topic courses from outside the program by submitting the appropriate course description to the world literature advisor. See "Relevant Topic Courses" on page 142 (above) for a list of pre-approved courses.

### Study Abroad

Students are encouraged to study abroad. See "Study Abroad" on page 142 (above).

## Minor Program

Students complete the following requirements.

### Lower Division Requirements

Students complete 12 units including one of  
 WL 100-3 Introduction to World Literature  
 WL 103-3 Pre-Modern World Literature  
 WL 104-3 Modern World Literature

plus  
 WL 200-3 Literary Analysis and Interpretation  
 and two additional three unit lower division WL courses.

### Upper Division Requirements

Students complete 16 upper division units in WL courses.

### Relevant Topic Courses

With prior approval, students may complete one lower or upper division relevant topic course (up to four units) from outside the World Literature Program by submitting the course description to the world literature advisor.

# Faculty of Business Administration

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## Associate Deans

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C.M. Collins BCom, PhD (Alta)  
I.M. Gordon BA, MA, PhD (S Fraser), CGA, FCGA

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Y. Yang BSc (Fudan), PhD (Tor)  
N. Zhao Dipl, MSc (Shandong), PhD (WOnt)

## Adjunct Professors

A.T. Bennington BA, MA (S Fraser)  
P.M. Clarkson BSc (Trent), BA (WOnt), BComm, MBA (Windsor), PhD (Br Col)  
M.S. Fogel BBA, LLB (Texas), MEd (Br Col)  
M. Frein BA (Car), MA, PhD (Br Col)  
S. Globerman BA (Brooklyn), MA (Calif), PhD (NY)  
G. Grant BA (Wat), MA, PhD (Pacifica)

S. Hall BEng (Paraiba), MEng, PhD (Sa Paulo)  
W. Holmes BA, MA (Wat), MBA (Br Col), DBA (S Qld)  
C. Perignon BA, MA, PhD (Geneva)  
S.G. Powell BA (Trent), MPhil (Camb), CA (UK)  
D.J. Sandhu BBA, MBA (S Fraser)  
J. Shepherd BSc, MBA (Warw), PhD (Strath)  
A.M. Sweeney BBA (S Fraser), CFA, CA  
C.H. Veld BA, MFE, PhD (Tilburg)  
G. Wagenheim BS (Maryland), MBA (Syr)  
D. Yee BSc, MSc, PhD (Br Col), CGA, CFA, FCGA  
Z.G. Zhang BSc, MA (Nankai, China), MBA (York), PhD (Wat)

## Senior Lecturers

M.R. Fizzell BEd, BComm, MSc (Sask), CMA, FCMA  
E.A. Macdonald BSc (S Fraser), MB (Monash), CA  
M.A. Moore BA (Car), MA, PhD (Col)  
K.G. Stewart BA (McM), MA (Br Col)  
R.A. Yates LLB, MBA (Br Col)

## Lecturers

S. Jones MA (Royal Roads)  
S. Spector BA, MA (S Fraser), CGA, FCGA

## Instructor

K. Trottier BComm (Ott), MSc (Br Col), CA

\*joint appointment with economics

## Undergraduate Degrees Offered

bachelor of business administration (honors)  
bachelor of business administration

## Certificate Offered

certificate in international experiential learning

## Programs Offered

BBA – general program  
major in business administration  
joint major in business administration and communication  
joint major in business administration and economics  
joint major in business administration and geography  
joint major in business administration and Latin American studies  
joint major in business administration and psychology  
joint major in information systems in business administration and computing science  
joint major in interactive arts and technology and business administration  
joint major in molecular biology and biochemistry and business administration (BSc)  
honors in business administration  
joint honors in business administration and economics  
joint honors in molecular biology and biochemistry and business administration

## Undergraduate Programs

### Executive Director

W. Holmes BA, MA (Wat), MBA (Br Col), DBA (S Qld), 2387 Lohn Building, 778.782.3700 Tel, 778.782.5571 Fax

### Advisors

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Please visit <http://business.sfu.ca/bba/contact-us>. Contact us by sending an e-mail to our advisors.

## Introduction

The faculty offers honors, major and minor programs at both the Burnaby and Surrey campuses, in co-operation with the Faculties of Applied Sciences, Arts and Social Sciences, and Science. The faculty also offers joint programs. For a complete list, please see *Programs Offered* above.

The value of a broadly based education is emphasized. Because of this objective, students will complete mainly non-business courses during the first 60 units, completing three categories of courses. The first category consists of lower division requirements which are mainly tool courses to prepare for more advanced upper division business courses. The second category consists of courses completed to meet university requirements in writing, quantitative and breadth. See "Writing, Quantitative, and Breadth Requirements" on page 144 (below). In the third category, choose courses are based on intellectual interest or to achieve academic goals. The first two categories should be completed during the first 60 units.

The last 60 units of the degree program consists of the completion of the core upper division business courses, at least one area of concentration, and lower and upper division electives. The following concentrations are available at the Burnaby campus: accounting, finance, international business, human resource management, management information systems, management science, and marketing. The following concentrations are available at the Surrey campus: entrepreneurship, finance, management and technology, and marketing. Students must choose either Burnaby or Surrey as their primary campus; however, they may freely choose to complete courses at both campuses.

The University Calendar in effect at the time the student's honors or major is approved establishes the degree requirements for the graduation of that student. All students should confirm with the undergraduate program co-ordinator the details of the requirements.

## Admission Requirements

### Criteria

Students will be selected competitively from one of four streams.

#### Category 1 – direct from secondary school

A portion of the annual admission will be selected from secondary school graduates based on the general Simon Fraser University admission requirements plus mathematics 12.\*

#### Category 2 – direct from college

A portion of the annual admission will be selected from students transferring from community colleges or technical institutes. These students must have completed all of the required lower division courses (except BUS 207 and 254 which may be completed after faculty admission\*\*). Students will be selected competitively based on the Simon Fraser University admission grade point average.

#### Category 3 – all courses at Simon Fraser University

A portion of the annual admission will be selected from students who have completed all of their courses at Simon Fraser University including the lower division requirement courses (except BUS 207 and 254 which may be completed after faculty admission\*\*). Students will be selected competitively based on the cumulative grade point average.

#### Category 4 – some Simon Fraser University and other post-secondary courses

A portion of the annual admission will be selected from students who have completed some courses at Simon Fraser University and some at other post-secondary institutions including the lower division requirement courses (except BUS 207 and 254 which may be completed after faculty admission\*\*). Students will be selected competitively based on a grade point average which will be a combination of grades earned at Simon Fraser University and other institutions. **Note:** minimum Simon Fraser University CGPA of 2.4 required.

To be considered for admission to the faculty, students in categories 2, 3 and 4 must have completed each lower division requirement course with a minimum C- grade. The number of undergraduate students granted entry to the faculty is limited to 500 to 600 new students per academic year.

\*or equivalent advanced placement or international baccalaureate courses as listed under *General Admission Requirements* for British Columbia Secondary Schools.

\*\*if BUS 207 and/or 254 have been completed, they will be calculated into the GPA used for faculty admission.

### Application Procedures

Students applying under category 1 or 2 should apply to the faculty at the same time that they apply for admission to the University.

Category 3 or 4 applicants should apply to the faculty after completing the 30th unit and before the 60th. Students should apply during the term in which the lower division requirements, as listed below (except BUS 207 and 254) are completed. Students not accepted upon initial application may reapply. Unsuccessful applicants may appeal through the faculty admissions appeals committee.

### Application Deadlines

April 1\* for summer term  
August 1\* for fall term  
December 1\* for spring term

\*application earlier in the term is recommended

In the second month of the term, students may apply online at [www.business.sfu.ca/bba/appform/index.php](http://www.business.sfu.ca/bba/appform/index.php)

### Non-Majors Access to Business Courses 300 and 400 division BUS Course Enrolment Restrictions

Students other than those accepted into a program in business administration may complete selected 300 division business administration courses contingent upon

- space available on day five of the first week of classes
- meeting the prerequisites for the requested course

Registration in BUS 360W and upper division courses in the honors accounting concentration is limited to students who are approved in a business plan.

Only students who have been formally admitted to the Faculty of Business Administration will be awarded a bachelor of business administration.

## General Requirements

In addition to the specific requirements for major, minor, honors and joint programs, all students should note the following.

In addition to normal university grade point average requirements, the faculty requires a minimum 2.40 cumulative grade point average (CGPA) for entry into all 300 and 400 division business administration courses.

For a course to be accepted as fulfilling a prerequisite, or for a lower division requirement, or for a core course to be accepted in a student's program in business administration, a student must have obtained a minimum grade of C- (C minus).

Students with fewer than 60 units may enrol in a maximum of 16 units per term. Those with 60 or more may enrol in a maximum of 18 units.

All upper division BUS courses have a prerequisite of 60 units. However, approved Business Administration majors or minors may complete 300 division BUS courses upon completion of 45 units.

For a course to be accepted as fulfilling a prerequisite, or for a core course to be accepted in a student's business administration program, a minimum grade of C- (C minus) must be obtained.

## Letters of Permission

Please see "Courses at Other Institutions/Letters of Permission" on page 28. The Faculty of Business Administration does not normally approve letters of permission for students already enrolled at Simon Fraser University.

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information.

## Major Program

Students complete at least 120 units which must include a minimum of 50 units outside the Faculty of Business Administration. Within the 50 units, students must meet the University requirements for breadth — two courses labelled as Breadth-Humanities, two courses labelled as Breadth-Science, and two courses labelled as Breadth-Social Science. Courses not labelled as BUS or BUEC that are completed as part of the lower division requirements may be used toward the 50 units outside business administration.

### Lower Division Requirements

Students complete all of  
BUS 237-3 Introduction to Computers and Information Systems in Business  
BUS 251-3 Financial Accounting I  
BUS 254-3 Managerial Accounting I\*  
BUS 272-3 Behavior in Organizations  
ECON 103-4 Principles of Microeconomics  
ECON 105-4 Principles of Macroeconomics  
and one of  
BUEC 232-4 Data and Decisions I  
STAT 270-3 Introduction to Probability and Statistics  
and one of  
BUS 207-3 Managerial Economics\*  
ECON 301 Microeconomic Theory I: Competitive Behavior  
and one of  
MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences  
MATH 157-3 Calculus for the Social Sciences I



and two of

ENGL 101-3 Introduction to Fiction  
 ENGL 102-3 Introduction to Poetry  
 ENGL 103-3 Introduction to Drama  
 ENGL 104-3 Introduction to Prose Genres  
 ENGL 105-3 Introduction to Issues in Literature and Culture  
 ENGL 199-3 Introduction to University Writing  
 PHIL 001-3 Critical Thinking  
 PHIL 100-3 Knowledge and Reality  
 PHIL 120-3 Introduction to Moral Philosophy

\*may be completed following admission to the faculty.

### Upper Division Requirements

In the last 60 units, students must complete a minimum of 45 upper division units, of which a minimum of 36 units must be in business administration or BUEC courses.

The 36 upper division units in business administration must include the following.

- all core courses (see *Core Courses* below)
- an area of concentration (see *Areas of Concentration* below)
- at least three 400 division BUS or BUEC courses (excluding practicum courses and BUS 478). These courses may be used toward the requirements for the area(s) of concentration.

Further upper division courses in any discipline must be completed to bring the total upper division credit to 45 units minimum.

Students may not enrol in upper division (300 and 400 division) business administration courses before completing the first 60 lower division units, with two exceptions:

- approved business majors and minors may complete upper division BUS courses after the completion of 45 units

Any 300 or 400 division course completed before the completion of 60 units will not count as fulfilling the 45 upper division units required in the final 60 units of the program, or as part of the upper division units for the major or minor.

### Core Courses

Students majoring in business administration are required to complete all of  
 BUS 303-3 Business, Society and Ethics  
 BUS 312-4 Introduction to Finance  
 BUS 336-4 Data and Decisions II  
 BUS 343-3 Introduction to Marketing  
 BUS 360W-4 Business Communication  
 BUS 393-3 Commercial Law  
 BUS 478-3 Seminar in Administrative Policy

and one of

BUS 374-3 Organization Theory  
 BUS 381-3 Introduction to Human Resource Management

Students complete BUS 360W before their 75th unit.

### Areas of Concentration

Students complete a concentration within one or more of the following areas by completing the courses specified below.

#### Accounting (Honors Only)

BUS 251-3 Financial Accounting I  
 BUS 254-3 Managerial Accounting I  
 BUS 320-3 Financial Accounting: Assets  
 BUS 321-3 Financial Accounting: Equities  
 BUS 322-3 Intermediate Managerial Accounting  
 BUS 329-4 Income Tax for Business Decision-Making  
 BUS 420-3 Advanced Accounting  
 BUS 421-3 Accounting Theory  
 BUS 424-3 Advanced Managerial Accounting  
 BUS 426-3 Auditing and Assurance: Concepts and Methods

**Note:** see "Honors Program" on page 146 for additional requirements.

Students may apply for the honors accounting concentration once they have completed their lower division requirements and have either completed or enrolled in BUS 320 and 360W. Admission is on a competitive basis. Upon completion of BUS 320 and 360W with a minimum grade of C+ the admission decision will be made.

Once admitted a minimum 3.0 CGPA must be maintained in order to remain in the program. Only students formally admitted to the accounting honors concentration will be permitted to enrol in accounting courses in the 300 and 400 divisions (with the exception of BUS 320).

#### Entrepreneurship

BUS 342-3 Foundations of Entrepreneurship  
 BUS 361-3 Project Management  
 BUS 314-3 New Venture Finance  
 BUS 443-3 Marketing for New Ventures  
 BUS 486-3 Leadership

#### Finance

BUS 312-4 Introduction to Finance  
 BUS 315-4 Investments  
 BUS 316-3 Derivative Securities

and two of

BUS 410-3 Financial Institutions  
 BUS 413-4 Corporate Finance  
 BUS 417-4 Security Analysis  
 BUS 418-3 International Financial Management  
 BUS 419-3 Advanced Derivative Securities

#### Human Resource Management

Students complete one of  
 BUS 374-3 Organization Theory  
 BUS 381-3 Introduction to Human Resource Management

and one of

BUS 482-3 Performance Management  
 BUS 487-3 Organizational Development and Change Management

and three of

BUS 485-3 Negotiations and Conflict Management  
 BUS 432-3 International Human Resources Management  
 BUS 472-3 Seminar in Organizational Behavior  
 BUS 481-3 Recruitment and Selection  
 BUS 484-3 Employment Systems  
 BUS 486-3 Leadership  
 BUS 488-3 Group Dynamics and Teamwork

#### Option A

Students who wish to become a personnel specialist in a human resource function should complete both of  
 BUS 381-3 Introduction to Human Resource Management

BUS 482-3 Performance Management

and three of

BUS 485-3 Negotiations and Conflict Management  
 BUS 432-3 International Human Resources Management  
 BUS 481-3 Recruitment and Selection  
 BUS 488-3 Group Dynamics and Teamwork

#### Option B

Students who wish to develop skills in managing people, including employment systems design, change and organizational leadership, should complete both of

BUS 374-3 Organization Theory  
 BUS 487-3 Organizational Development and Change

and three of

BUS 485-3 Negotiations and Conflict Management  
 BUS 484-3 Employment Systems  
 BUS 486-3 Leadership  
 BUS 488-3 Group Dynamics and Teamwork

### International Business

BUS 346-3 International Business

and one of

BUS 380-3 Comparative Management  
 BUS 432-3 International Human Resources Management

and one of

BUS 434-3 Foreign Market Entry\*  
 BUS 435-3 Management of International Firms

and one of

BUS 431-3 Business with East Asian Countries  
 BUS 492-3 Selected Topics in Business Administration  
 BUS 493-3 Selected Topics in Business Administration  
 BUS 494-3 Selected Topics in Business Administration  
 BUS 495-3 Selected Topics in Business Administration

Students must also complete one of any 400 division international business course that has not previously been used to satisfy the above requirements, or one of

BUS 418-3 International Financial Management  
 BUS 447-3 International Marketing Management

Other upper division courses deemed to have significant international business relevance may, with prior faculty permission, be substituted for the above courses. These may be offered in another faculty.

\*or an approved selected topics course in international business

**Note:** students concentrating in international business are strongly advised to consider combining it with another business concentration.

### Management Information Systems

BUS 361-3 Project Management  
 BUS 362-4 Business Process Analysis  
 BUS 468-3 Managing Information Technology for Business Value

and two of

BUS 462-3 Business Intelligence  
 BUS 464-3 Data Management and IS Audit  
 BUS 466-3 Web-Enabled Business  
 BUS 492-496-3 Selected Topics in Business Administration

### Management of Innovation

BUS 338-3 Managing Technological Innovation  
 BUS 361-3 Project Management

and three of

BUS 450-3 Emerging Technologies for Business  
 BUS 453-3 Sustainable Innovation  
 BUS 452-3 Strategic Management of Innovation  
 BUS 454-3 Creativity in Business

### Management Science

BUS 336-4 Data and Decisions II  
 BUS 473-4 Operations Management

and two of

BUEC 433-5 Forecasting in Business and Economics  
 BUS 437-3 Decision Analysis in Business  
 BUS 440-4 Simulation in Management Decision Making  
 BUS 474-3 Supply Chain Management  
 BUS 492-3 Special Topics in Business Administration (if/when offered with a management science topic)

### Marketing

BUS 343-3 Introduction to Marketing  
 BUS 345-4 Marketing Research  
 BUS 347-3 Consumer Behavior

and three of

BUS 444-3 Business to Business Marketing  
 BUS 445-3 Analysis of Data for Management  
 BUS 446-4 Marketing Strategy  
 BUS 447-3 Global Marketing Management

BUS 448-4 Integrated Marketing Communications  
 BUS 449-3 Ethical Issues in Marketing  
 BUS 459-3 Services Marketing

## Honors Program

After the completion of 15 upper division business administration units, students may apply to enter the honors program. Honors students meet all major program requirements except where specifically modified for joint honors. The honors requires 12 units of 400 division courses beyond the 120 required for the major. These units must be in 400 division BUS or BUEC courses or in other faculties approved in advance by the undergraduate program's executive director. The 12 units are in addition to the area of concentration and major program core courses.

For details about the accounting concentration, which is available to honors students only, see page 145.

In the last 72 units, student complete 57 upper division units, 42 of which are BUS or BUEC.

## Grade Point Averages

For entry, continuance and graduation, the following grade point averages will be used.

- minimum 3.00 cumulative GPA (3.5 for first class honors at graduation)
- minimum 3.00 GPA for upper division BUS courses (3.5 for first class honors at graduation)
- minimum 3.00 GPA for upper division BUEC courses (3.5 for first class honors at graduation)

## Accounting Concentration

See "Accounting (Honors Only)" on page 145 for curriculum for this honors only concentration.

## Honors Term at the Segal Graduate School of Business

The Segal Graduate School of Business enables business administration undergraduate students to complete a 12 unit program fulfilling the honors requirements by completing all of  
 BUS 456-4 Segal Honors Seminar I  
 BUS 457-4 Segal Honors Seminar II  
 BUS 458-4 Segal Honors Seminar III

The honors term at Segal is offered once a year, usually in the fall or spring term. Students may apply after completing 90 units. Applications are available in the undergraduate offices, 2330 Lohn Building.

Each full-time, one-term program emphasizes

- current issues in business and society
- industry interaction
- dialogue and discussion as conduits for student centred learning
- small class sizes

Proposed entrance requirements

- 105 units
- minimum 3.5 cumulative grade point average

Possible themes

- sustainability and business – corporate environmental policy, sustainability and society, management of non-renewable resources, environmental finance and risk management
- ethics and corporate social responsibility – corporate environmental policy, ethics, leadership and scandal in large organizations, CSR as a strategic management tool
- business and globalization – outsourcing, managing the virtual company, globalization and the local business, the role of business in economic development
- management during technological change – HRM in a hi-tech environment, leadership and technological change; entrepreneurship and technological innovation, marketing the new thing

## Minor Program

### Lower Division Requirements

Students complete one of  
 BUEC 232-4 Data and Decisions I  
 STAT 270-3 Introduction to Probability and Statistics  
 and all of  
 BUS 237-3 Introduction to Computers and Information Systems in Business  
 BUS 251-3 Financial Accounting I  
 BUS 254-3 Managerial Accounting I\*  
 BUS 272-3 Behavior in Organizations  
 ECON 103-4 Principles of Microeconomics  
 ECON 105-4 Principles of Macroeconomics  
 and one of  
 MATH 150-4 Calculus I with Review  
 MATH 151-3 Calculus I  
 MATH 154-3 Calculus I for the Biological Sciences  
 MATH 157-3 Calculus for the Social Sciences I

\*may be completed after admission to the faculty

### Upper Division Requirements

If permission is granted to complete any 300 or 400 division BUS or BUEC course before the completion of 60 units, then those courses will not count toward fulfilling the 16 upper division units for the minor.

At least 16 upper division BUS or BUEC units are required including the following.

BUS 312-4 Business Finance  
 BUS 343-3 Introduction to Marketing

and one of

BUS 374-3 Organization Theory  
 BUS 381-3 Introduction to Human Resource Management

## SFU Business@Surrey

*Associate Director*

A.C. Gemino BA, MA, MBA (S Fraser), PhD (BR Col)

The first two BBA study years are similar at both the Burnaby and Surrey campuses since the core courses are common. The first year's preparatory courses form the business studies basis. At Simon Fraser University Surrey, these first year courses are offered through integrated, cohort-based programs in the Faculty of Arts and Social Sciences (Explorations), Faculty of Science (Science List 1 or 2), or Faculty of Communication, Art and Technology (TechOne). Students in these should complete ECON 103, 105, BUS 251, MATH 157 (or MATH 150, 151, or 154) during the first year. Visit <http://business.sfu.ca/bba/the-program/academic/program-requirements/course-planner-surrey.php>

The third and fourth year are also similar at both campuses. Students complete core upper division business courses, at least one area of concentration, and lower and upper division electives. The finance, entrepreneurship, management and technology, and marketing concentrations are offered at the Surrey campus; a concentration not offered in Surrey can be completed at the Burnaby campus.

Business Co-operative Education Program, International Exchange Program, Business Career Management Centre, and Business Student Affairs Office, are available at both campuses.

## Joint Programs

### Common Requirements

All joint major and honors programs require the student to qualify for, and receive admission to the program, and must remain qualified for continuance in the faculty of Business Administration, **and** must be

accepted as a joint major or joint honors in the co-operating department or school.

The Faculty of Business Administration lower division requirements and core courses must be completed, except as specifically modified below (see "Core Courses" on page 145). For joint programs, BUS 360W is recommended but not required. BUS 360W will be waived as a prerequisite for 400 division BUS courses for those in approved BUS joint programs.

With the exception of the joint major and joint honors in molecular biology, biochemistry and business administration (MBB&B), students in joint programs may opt for a degree from either faculty involved. The MBB&B joint major results in a bachelor of science degree from the Faculty of Science. Faculty requirements will be governed by the faculty from which the student chooses to complete a degree.

## Business Administration and Communication Joint Major Program

Students complete at least 32 upper division units in business administration or BUEC courses including the core courses, and the marketing courses specified below.

### Marketing Required Courses

BUS 343-3 Introduction to Marketing  
 BUS 347-3 Consumer Behavior  
 BUS 442-4 Introduction to Marketing Research  
 and at least one of the following  
 BUS 445-3 Analysis of Data for Management  
 BUS 446-4 Marketing Strategy  
 BUS 448-4 Advertising and Sales Promotion  
 BUS 449-3 Ethical Issues in Marketing

### Communication Lower Division Requirements

CMNS 110-3 Introduction to Communication Studies  
 CMNS 130-3 Explorations in Mass Communication  
 and six 200 division CMNS courses for a total of 24 units in communication including both of  
 CMNS 221-3 Media and Audiences  
 CMNS 223-3 Advertising as Social Communication  
 and at least two of  
 CMNS 260-3 Empirical Communication Research Methods  
 CMNS 261-3 Documentary Research in Communication  
 CMNS 262-3 Design and Method in Qualitative Communication Research

### Communication Upper Division Requirements for Marketing Concentration

Students complete six courses (minimum 24 units) of upper division courses in communication including  
 CMNS 323-4 Cultural Dimensions in Advertising  
 CMNS 425 is recommended but not required.

Directed studies (readings) and field placement credit will not count as part of the upper division units that are required by communication for the joint major.

## Business Administration and Economics Joint Major Program

Students complete at least 29 upper division units in business administration or BUEC,\* including the core courses with the following exceptions.

- BUS 207 and 303 are waived.
- BUEC 333, which must be completed, will count as upper division economics units rather than as upper division business administration units.

Three courses beyond the core must be completed within the requirements of a single concentration.

At least two 400 division BUS or BUEC courses\* (excluding practicum courses and BUS 478)

\*may be within the area of concentration.

Students must also complete at least 25 upper division units in economics or BUEC\* including

ECON 301-4 Microeconomic Theory I: Competitive Behavior

ECON 302-4 Microeconomic Theory II: Strategic Behavior

ECON 305-5 Intermediate Macroeconomic Theory and at least one 400 division economics or BUEC\* course (excluding ECON 431, 435, BUEC 433 and 485).

### Economics Group Requirements

Students complete one of

ECON 102-3 The World Economy

ECON 104-3 Economics and Government

ECON 110-3 Foundations of Economic Ideas

ECON 208-3 History of Economic Thought

ECON 250-3 Economic Development in the Pre-Industrial Period

ECON 309-3 Introduction to Marxian Economics

ECON 353-4 Economic History of Canada

ECON 354-3 Comparative Economic Institutions

ECON 355-4 Economic Development

ECON 404-3 Honors Seminar in Methodology of the Social Sciences

ECON 409-3 Seminar in Economic Thought

ECON 450-3 Seminar in Quantitative Economic History

ECON 451-3 Seminar in European Economic History

ECON 452-3 Economic Prehistory

ECON 453-3 The Economics of Education

ECON 455-3 Seminar in Economic Development

ECON 490-3 Seminar in Public Choice

\*BUEC courses may count only once as business administration units or as economics units.

### Business Administration and Geography Joint Major Program

#### Business Administration Requirements

The student must successfully complete the core courses and complete one additional 400 division course in the Faculty of Business Administration.

#### Geography Requirements

The student must successfully complete a minimum of 15 lower division geography units including

GEOG 100-3 Human Geography

GEOG 111-3 Earth Systems

GEOG 221-3 Economic Geography

The student must successfully complete a minimum of 24 units of upper division geography courses including the following.

12 units at the 300 division courses

12 units at the 400 division courses

### Business Administration and Latin American Studies Joint Major Program

#### Business Administration Requirements

The student must successfully complete the core courses plus BUS 346 and two of the following.

BUS 380-3 Comparative Management

BUS 432-3 International Human Resource Management

BUS 434-3 Foreign Market Entry

BUS 435-3 Management of International Firms

BUS 439-3 North American International Trade Issues

BUS 447-3 International Marketing Management

With the permission of the international business area co-ordinator and the faculty, another course may be substituted for one the five listed above.

### Latin American Studies Requirements

#### Lower Division

Students must demonstrate reading and speaking competence in Spanish or Portuguese equivalent to successful completion of three college level courses.

A minimum of 12 units is required including LAS 200-3 Introduction to Latin American Issues

plus any two of

ARCH 273-3 Archaeology of the New World

HIST 208-3 Latin America: The Colonial Period

HIST 209-3 Latin America: The National Period

plus one of

BUS 130-3 Business in the Networked Economy I

CMNS 110-3 Introduction to Communication Studies

CMNS 130-3 Explorations in Mass Communication

ECON 102-3 The World Economy

ECON 110-3 Foundations of Economic Ideas

GEOG 100-3 Human Geography

GEOG 111-3 Physical Geography

POL 100-3 Introduction to Politics and Government

REM 100-3 Global Change

SA 101-4 Introduction to Anthropology (A)

SA 150-4 Introduction to Sociology (S)

#### Upper Division

Students complete 20 upper division units in Latin American studies including

LAS 498-5 Capstone Project

The remaining 15 units must come from the approved list of courses with primary LAS focus (see "Courses with Primary Latin American Focus" on page 123).

### Molecular Biology and Biochemistry and Business Administration Joint Major Program

See "Molecular Biology and Biochemistry and Business Administration Joint Major Program" on page 202.

### Business Administration and Psychology Joint Major Program

#### Business Administration Requirements

- successful completion of at least one 400 division management and organization studies course
- completion of the business administration core courses, except with advance permission of the Faculty of Business Administration, the combination of PSYC 210 and 301 may be substituted for the combination of BUEC 232\* and BUS 336.

#### Psychology Requirements

##### Lower Division Requirements

all of

PSYC 100-3 Introduction to Psychology I\*

PSYC 102-3 Introduction to Psychology II\*

PSYC 201-4 Introduction to Research Methods in Psychology\*

PSYC 207-3 Introduction to the History of Psychology\*

PSYC 210-4 Introduction to Data Analysis in Psychology\*

PSYC 260-3 Introduction to Social Psychology

PSYC 268-3 Introduction to Law and Psychology

\*to be admitted to the psychology program, students must obtain a final course grade of C (2.0) or better in each of these courses.

**Note:** The above requirement applies to courses transferred from other institutions as well as to courses completed at Simon Fraser University.

Students complete one of

PSYC 221-3 Introduction to Cognitive Psychology

PSYC 241-3 Introduction to Abnormal Behavior

PSYC 250-3 Introduction to Developmental Psychology

PSYC 270-3 Introduction to Theories Personality

PSYC 280-3 Introduction to Biological Psychology

#### Upper Division Requirements

Students complete 21 units in upper division psychology courses. No more than five of these units may be in directed studies. At least 11 upper division psychology units must be completed at Simon Fraser University.

**Note:** students must complete either BUEC 232\* and BUS 336 or PSYC 210 and 301. Students who complete BUS 336 must still fulfil a minimum of 21 upper division psychology units. Students who complete PSYC 301 must still fulfil a minimum of 24 upper division units in business administration.

### Business Administration and Economics Joint Honors Program

#### Economics Group Requirements

To meet the Department of Economics group requirements for the economics major program, students must include at least one course from the economics group requirements. For information, see "Group Requirements" on page 105.

#### Lower Division Requirements

The requirements are the same as for the joint major in business administration and economics.

#### Upper Division Requirements

- at least 35 upper division units in business administration including the core courses
- an area of concentration
- at least three 400 division courses (excluding practicum courses and BUS 478). These courses may be within the area of concentration.
- plus at least 30 upper division units in Economics or BUEC including all of

BUEC 333-4 Statistical Analysis of Economic Data  
ECON 301-4 Microeconomic Theory I: Competitive Behavior

ECON 302-4 Microeconomic Theory II: Strategic Behavior

ECON 305-5 Intermediate Macroeconomic Theory

ECON 331-5 Introduction to Mathematical Economics\*\*

plus one of

ECON 402-3 Advanced Topics in Microeconomics

ECON 403-3 Advanced Topics in Macroeconomics

and one of

ECON 435-5 Quantitative Methods in Economics

ECON 499-6 Honors Seminar in Economics

\*these courses may be within the areas of concentration

\*\*joint honors students who have successfully completed both MATH 323 and 251 need not complete ECON 331. However, at least 30 upper division units in economics must still be completed.

#### Grade Point Averages

For entry, continuance and graduation with a BBA, the following grade point averages will be used.

- minimum 3.00 cumulative GPA (3.5 for first class honors at graduation)
- minimum 3.00 GPA for upper division BUS courses (3.5 for first class honors at graduation)
- minimum 3.00 GPA for upper division BUEC courses (3.5 for first class honors at graduation)
- minimum 3.00 GPA for upper division ECON courses (3.5 for first class honors at graduation)

For information about required grade point averages for the BA credential, see "Grade Point Averages Needed for Graduation" on page 31.

## Information Systems in Business Administration and Computing Science Joint Major Program

Students must qualify for and receive admission to, and must remain qualified for continuance in, the Faculty of Business Administration, and must be accepted as a computing science joint major.

### Lower Division Requirements

Students complete one of  
BUEC 232-4 Data and Decisions I  
STAT 270-3 Introduction to Probability and Statistics

and either

CMPT 126-3 Introduction to Computer Science and Programming

or both of

CMPT 120-3 Introduction to Computing Science and Programming I

CMPT 125-3 Introduction to Computing Science and Programming II

and all of

BUS 251-3 Financial Accounting I

BUS 254-3 Managerial Accounting I

BUS 272-3 Behavior in Organizations

CMPT 150-3 Introduction to Computer Design

CMPT 225-3 Data Structures and Programming

CMPT 275-4 Software Engineering

ECON 103-4 Principles of Microeconomics

ECON 105-4 Principles of Macroeconomics

MACM 101-3 Discrete Mathematics I

MACM 201-3 Discrete Mathematics II

and one of

MATH 150-4 Calculus I with Review

MATH 151-3 Calculus I

MATH 157-3 Calculus for the Social Sciences I

and one of

MATH 152-3 Calculus II

MATH 158-3 Calculus for the Social Sciences II

and one of

MATH 232-3 Applied Linear Algebra

MATH 240-3 Elementary Linear Algebra

and two of the following writing courses

ENGL 101-3 Introduction to Fiction

ENGL 102-3 Introduction to Poetry

ENGL 103-3 Introduction to Drama

ENGL 104-3 Introduction to the Essay as Literature

ENGL 105-3 Introduction to Issues in Literature and Culture

ENGL 199-3 University Writing

PHIL 100-3 Knowledge and Reality

PHIL 120-3 Introduction to Moral Philosophy

### Upper Division Requirements

all of

BUS 312-4 Introduction to Finance

BUS 336-4 Data and Decisions II

BUS 343-3 Introduction to Marketing

BUS 364-3 Information Systems in Organizations and Society

BUS 468-3 Management Issues in Information Systems

BUS 478-3 Seminar in Administrative Policy

CMPT 300-3 Operating Systems

CMPT 307-3 Data Structures and Algorithms

CMPT 320-3 Social Implications of a Computerized Society

CMPT 354-3 Database Systems and Structures

CMPT 370-3 Information System Design

and one of

BUS 374-3 Organization Theory

BUS 381-3 Introduction to Human Resource Management

and one of

BUS 466-3 Managing Data Communications

CMPT 371-3 Data Communications and Networking

plus nine additional upper division CMPT units,

excluding CMPT 301. At least one of the courses

must be at the 400 division or above.

Upon completion of these requirements, students may choose either a BBA degree (offered by the Faculty of Business Administration), or a BSc degree (offered by the Faculty of Applied Sciences) with the completion of two additional specific courses. See "Information Systems in Business Administration and Computing Science Joint Major Program" on page 81 regarding the BSc requirements for joint majors.

## Interactive Arts and Technology and Business Administration Joint Major Program

For information, see "Interactive Arts and Technology and Business Administration Joint Major Program" on page 148.

## Molecular Biology and Biochemistry and Business Administration Joint Honors Program

For information, see "Molecular Biology and Biochemistry and Business Administration Joint Honors Program" on page 202.

## Second Bachelor's Degree

Please see "Second Bachelor's Degrees" on page 7.

The minimum requirements for completion of a second undergraduate degree in business administration (BBA) are as follows.

- formal admission to the program
- lower division course requirements
- writing, quantitative and breadth requirements (see "English Language and Literacy Admission Requirement, and Quantitative and Analytical Skills Requirement" on page 17 and "Quantitative and Analytical Skills Requirements" on page 19)
- 45 upper division units, of which 36 must be business administration (BUS) or business administration/economics (BUEC)
- 36 upper division BUS or BUEC units which must include core courses, an area of concentration and the 400 division requirement

See "Major Program" on page 144 for information.

## Certificate in International Experiential Learning

Students are required to complete a minimum of 18 units which are earned through the following three activities.

- participation in two international activities, one of which must be a study semester abroad as an exchange student at a Faculty of Business Administration preferred partner institution

- completion of two three-unit language courses in a second language other than English, commonly spoken in the region in which either one of the international activities will take place, and
- completion of a three unit courses, the topic of which will relate to the socio-economic and/or cultural environment in which the international activities will take place.

## Exchange and International Experience Component

Students will be required to complete one semester of at least nine units on an international exchange at a Faculty of Business Administration preferred partner institution. For the second international activity, students will have the option of the following.

- a second international exchange at the same or another Faculty of Business Administration preferred partner institution
- a Faculty of Business Administration sponsored field school; or
- an international co-operative education work term

Although students will be encouraged to choose one region or country to fulfil these requirements, they will have the option to enrol in international exchanges, field schools or co-operative education in countries or regions that are different from their first exchange.

## Language Component

To increase exposure to the local culture, students will be required to complete two three-unit courses in a language(s) of the region (preferably the host country) in which the exchange, Faculty of Business Administration sponsored field school or international co-operative education work term will take place. Students attending an international activity in an English-speaking country till have to select a second language that is commonly spoken in the region. These courses may be completed at Simon Fraser University, or at any institution of the student's choosing, provided that Simon Fraser University accepts the course as transfer credit, and the course could be completed during the exchange term abroad, or the international co-operative education work term. The purpose of this requirement is to strengthen the student's ability to communicate in the host country's language. Students who are already fluent in a language of the region may fulfil the language requirement by pursuing a third language, or by completing business courses that are taught in their second language.

## Socio-economic and/or Cultural Course

Prior to the exchange term, students will be required to complete, at Simon Fraser University, one of the following courses (or other courses with appropriate content and prior approval from the Faculty). Note that some of these courses may have prerequisites.

*For students in the Asia region*

ASC 200-3 Introduction to Chinese Culture

ASC 201-3 Introduction to Japanese Culture

ASC 202-3 Asian Cultures

HIST 206-3 Modern Japan

HIST 256-3 People's Republic of China

POL 335-4 Government and Politics: People's Republic of China

POL 381-4 Politics and Government of Japan

SA 275-4 Asian Societies

*For students in the Europe Region*

HIST 225-3 20th Century Europe

POL 333-4 Soviet and Post-Soviet Political Systems

POL 334-4 East European Political Systems

*For students in the Latin America region*

HIST 208-3 Latin America: The National Period

POL 320-4 Canada and Latin America

POL 337-4 Government and Politics: Latin America  
SA 392-4 Latin America

Alternatively, students may complete a similar course while studying abroad on an exchange semester at the host institution, with prior approval from the Faculty.

## Exchange Programs

### Contacts

international student co-ordinator, 2385 Lohn Building, 778.782.5564 Tel

co-ordinator, international mobility, SFU International, 1200 Maggie Benston Student Services Centre, 778.782.4555/5887 Tel

The faculty participates in undergraduate student exchange agreements with the following institutions.

### Australia

Monash University

### Austria

Vienna University of Economics and Business Administration

### Chile

Pontificia Universidad Catolica de Chile (PUC)

### China

Chinese University of Hong Kong  
Tsing hua University  
University of Hong Kong

### Czech Republic

Czech Republic University of Economics

### Denmark

Copenhagen Business School

### Finland

Helsinki School of Economics

### France

ESCP-EAP European School of Management  
Grenoble Ecole de Management

### Germany

University of Mannheim

### Hungary

Corvinus University of Budapest

### Ireland

Quinn School of Business  
University College Dublin

### Italy

Bocconi University

### Japan

Ritsumeikan Asia-Pacific University

### Korea

Yonsei University  
Seoul National University

### Mexico

Instituto Tecnológico Autónomo de México (ITAM)  
Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM)

### Netherlands

Maastricht University

### New Zealand

University of Auckland

### Norway

BI Norwegian School of Management

### Poland

Warsaw School of Economics

### Russia

Plekhanov Russian Academy of Economics

### Singapore

National University of Singapore

### Spain

University of Navarra

### Sweden

Lund University

### Taiwan

National Chengchi University  
National Taiwan University

### Thailand

Chulalongkorn University

### United Kingdom

Manchester Business School  
University of Bath School of Management  
Strathclyde Business School

### United States

San Diego State University

Although the Faculty of Business Administration promotes the institutions listed on this page through travel subsidies, students are not restricted to these universities. In addition to those listed here, Simon Fraser University has exchange agreements with many more institutions. For more information about application deadlines, etc., please contact SFU International or see [www.sfu.ca/international](http://www.sfu.ca/international).

## Field School Programs

A field school can be described as an extended field trip, group study tour, or an off-campus delivery of Simon Fraser University courses for a group of 12-20 students. Each field school is a full term program, directed by a Simon Fraser University instructor, consisting of nine to 12 units of selected courses delivered through course work, assignments, and field studies beginning at a Simon Fraser University campus and then traveling overseas to one or more locations. Tuition, shared accommodation, basic health insurance, and field excursions are included in the cost of the field school.

## Co-operative Education

2310 Lohn Building, 778.782.3619 Tel, 778.782.5922 Fax, [www.sfu.ca/coop](http://www.sfu.ca/coop)

### Program Director

S. Tonsaker BA (S Fraser), 2317 Lohn Building, 778.782.4993 Tel, 778.782.5922 Fax

The Faculty of Business Administration offers co-operative education to students including Simon Fraser University Surrey. Co-operative education formally integrates a student's academic studies on campus with relevant work experience. Employers from business, industry and government support and participate in the program. This 'hands-on' approach to education extends the learning process beyond the limits of the classroom and into the working world by

alternating full time study terms with full time paid work terms of career-related practical experience.

For those seeking a professional accounting designation (CA, CGA, CMA) arrangements have been made with respective accounting organizations so that work experience obtained during the program may be recognized toward the required practical experience.

## Admission

Admission to the Faculty of Business Administration is required before intake to the co-operative education program is considered.

A student must remain in good academic standing in the Faculty of Business Administration to continue in the program.

Co-op programs are open to Canadian citizens, permanent residents, and visa students.

## Application Process

Co-operative education has an application process which includes completing the Bridging Online (BOL) course. Refer to [www.sfu.ca/coop/bol](http://www.sfu.ca/coop/bol). BOL must be completed prior to your business co-op intake.

## Practicum Course Requirements

To qualify for the bachelor of business administration with a major in business administration and a co-operative education designation, students must meet University and Faculty of Business Administration graduation requirements.

In addition, students who choose the chartered accountancy option must complete three work terms. A co-operative education designation requires four work terms and a certificate requires three work terms.

During study terms a student must maintain full time status. A brochure which outlines program features is available from the business administration co-op education program co-ordinators.

## Business Career Management Centre

### Associate Director

L. Dalla Vecchia, 2320 Lohn Building, 778.782.5544 Tel, 778.782.3028 Fax, [bbcareers@sfu.ca](mailto:bbcareers@sfu.ca), [www.sfu.ca/business/careers](http://www.sfu.ca/business/careers)

The Business Career Management Centre offers resources and services to assist undergraduate and graduate students in the Faculty of Business Administration with preparation for business careers. One-on-one career counselling and advising, career workshops, company information sessions, on-campus recruitment activities, and the annual Business Career Expo provide opportunities to meet and network with employers. Extensive career-related resources are available at the centre and online at [www.sfu.ca/business/careers](http://www.sfu.ca/business/careers). Simon Fraser University business students and alumni have access to full time, part time, ongoing, temporary and volunteer work opportunities via Career Network at [www.business.sfu.ca/careers](http://www.business.sfu.ca/careers)

# Faculty of Communication, Art and Technology

8800 Technology and Science Complex 2,  
778.782.8790 Tel, 778.782.8789 Fax,  
http://www.fcat.sfu.ca

## Dean

C. Geisler BA (Carleton Coll), MS (W Illinois), PhD  
(Carnegie-Mellon)

## Advisor

Ms. S. Greaves BA (Trent), 778.782.5332 Tel

The Faculty of Communication, Art and Technology  
offers programs in communication, contemporary  
arts, interactive arts and technology, and publishing.

## Undergraduate Degrees Offered

bachelor of arts (honors)  
bachelor of arts  
bachelor of fine arts  
bachelor of science (honors)  
bachelor of science  
bachelor of science (information technology,  
Tech BC)  
bachelor of science (interactive arts, Tech BC)

## Diploma Offered

post baccalaureate diploma in communication

## School of Communication

K9671 Shrum Science Centre, 778.782.3687 Tel,  
778.782.4024 Fax, www.cmns.sfu.ca

## Director

M. Laba BA (York, Can), MA, PhD (Nfld)

## Professors

R.S. Anderson BA (Br Col), MA, PhD (Chic)  
E. Balka BA (Wash), MA, PhD (S Fraser)  
A.C.M. Beale BA, MA, PhD (McG)  
A.L. Feenberg, BA (Johns H), MA, PhD (Calif),  
Canada Research Chair  
R.S. Gruneau BA (Guelph), MA (Calg), PhD (Mass)  
R.A. Hackett BA (S Fraser), MA, PhD (Qu)  
L.M. Harasim BA, MA (Alta), PhD (Tor)  
S. Kline BA (Tor), PhD (Lond)  
B.S. Lewis BA (Hamilton), MA, PhD (Iowa)  
R.M. Lorimer BA, MA (Manit), PhD (Tor)  
C.A. Murray BA, MA (Wat), PhD (Qu)  
R.K. Smith BA (Car), MA, PhD (S Fraser)  
B.D. Truax BSc (Qu), MMus (Br Col)  
Y. Zhao BA (Beijing Broadcasting Institute), MA, PhD  
(S Fraser), Canada Research Chair

## Associate Professors

P.S. Anderson BGS, MA (S Fraser)  
Z. Druick BA (C'dia), MA, PhD (York, Can)  
M. Laba BA (York, Can), MA, PhD (Nfld)  
J. Marontate BA (York, Can), MSc, PhD (Montr)  
G. McCarron BA (S Fraser), MA, PhD (York, Can)

## Assistant Professors

P. Chow-White BA (Br Col), MA (S Fraser),  
PhD (S Calif)  
S. Gunster BA (Vic, BC), MA, PhD (York, Can)  
D.Y. Jin BA, MA (Korea), MPA (Texas), PhD (Ill)  
K. McAllister BA, MA (S Fraser), PhD (Car)  
S. Poyntz BA (QU), MA, PhD (Br Col)

## Adjunct Professors

S. Braham BSc (Lond), PhD (Penn State)  
N. Duxbury BA (St Mary's, Can), MPub,  
PhD (S Fraser)  
J.A.D. Holbrook BSc (Dal), BASc (Ott), MSc (WOnt)

## Lecturers

K.A. Cross BA, PhD (S Fraser)  
D.C. Murphy BA, MA (S Fraser)

## Advisors

Ms. N. Shahani, K9677 Shrum Science Centre,  
778.782.3520, cmnsad@sfu.ca

Ms. M. Shimizu BA (S Fraser), K9669 Shrum Science  
Centre, 778.782.3862, mshimizu@sfu.ca

Ms. E. Wah BA (Calg), K9661 Shrum Science Centre,  
778.782.5542 Tel, ewah@sfu.ca

Faculty members are also available for consultations.

The school offers specialized programs leading to a  
bachelor of arts degree. It also offers a minor and a  
variety of courses. The school is interdisciplinary and  
international in its approach and offers study in three  
broad and interrelated areas of concentration (see  
below) but students may complete courses from more  
than one area. (Courses may be listed in more than  
one area.)

## Media and Culture

CMNS 200, 210, 220, 221, 223, 226, 230, 235, 240,  
258, 304, 310, 320, 321, 323, 324, 325, 326, 331,  
347, 348, 358, 363, 410, 423, 424, 425, 426, 428,  
431, 437, 443, 444, 445, 447, 448, 452

## Technology and Society

CMNS 210, 253, 258, 259, 342, 346, 347, 353, 354,  
358, 359, 362, 408, 446, 447, 453, 454, 455, 456, 458

## Political Economy and Policy

CMNS 210, 230, 235, 240, 310, 323, 331, 333, 334,  
336, 342, 346, 353, 354, 371, 410, 431, 433, 435,  
437, 438, 443, 444, 445, 446, 455

## Enrolment Limitations and Admission

Admission to all of the school's programs is based on  
cumulative grade point average (CGPA), and  
available places. Space in CMNS courses is mostly  
reserved for those with formal program acceptance.  
Every CMNS program applicant whose CGPA is  
greater than, or equal to, the annually announced  
requirement will be admitted. These requirements  
also apply to a transfer or second degree students.

CMNS course enrolment requires a C- grade or better  
in each prerequisite course. A minimum 2.25 CGPA  
and approval as a communication honors, major,  
extended minor, minor, dialogue, or publishing minor  
is required for entry into most communication upper  
division courses.

Transfer students are advised that residency  
requirements apply to all communication programs.

## Writing, Quantitative and Breadth Requirements

Students completing degree programs must fulfil  
writing, quantitative and breadth requirements as part  
of their program. See "Writing, Quantitative, and  
Breadth Requirements" on page 7 for information.

## Major Program

Program entry is via direct admission from high  
school, via college or university transfer, or via  
internal transfer if admitted to another Simon Fraser  
University department or program. At the time of  
printing, entry from high school requires a 75% or  
better CGPA; college or university transfer requires a  
CGPA of 3.00 (B; 75%) or better; and internal  
University transfer requires a 2.50 or better CGPA,  
upon completion of lower division requirements (see  
below). A minimum 2.25 CGPA is required to remain  
in the program.

## Lower Division Requirements

A grade of C- or better is *mandatory* in each of the  
required lower division CMNS courses below.

Students complete both of  
CMNS 110-3 Introduction to Communication Studies  
CMNS 130-3 Explorations in Mass Communication  
(or 130W)

and at least six 200 division CMNS courses (18 units),  
including at least two of  
CMNS 260-3 Empirical Communication Research  
Methods\*

CMNS 261-3 Documentary Research in  
Communication

CMNS 262-3 Design and Method in Qualitative  
Communication Research

\*completion of this quantitative (Q) course satisfies  
half of the University's Q requirement for students  
admitted in fall 2006 or later

*Media and Culture Concentration*  
and one of†

CMNS 220-3 Understanding Television

CMNS 221-3 Media and Audiences

CMNS 223-3 Advertising as Social Communication  
(or 223W)

CMNS 235-3 Introduction to Journalism in Canada

†to satisfy the University's upper division Writing  
requirement, students may choose to complete either  
CMNS 304W or 323W, in which case the  
prerequisites for either of these is **two** of CMNS 220,  
221, 223 (or 223W).

*Political Economy and Policy Concentration*  
and one of

CMNS 230-3 The Cultural Industries in Canada:

Global Context

CMNS 240-3 The Political Economy of  
Communication

*Technology and Society Concentration*  
and one of

CMNS 210-3 Media History

CMNS 253-3 Introduction to Information Technology:  
The New Media (or 253W)

## Upper Division Requirements

A minimum total of 45 upper division units is required.  
This includes the required upper division CMNS  
courses, any additional upper division CMNS courses  
completed, and any upper division courses completed  
to fulfil the required 40 units outside the school (see  
"External Requirements" on page 150).

Students complete seven upper division CMNS  
courses (at least 28 units), at least two of which are  
400 CMNS division courses. Directed study and field  
placement courses may not be used to meet this  
requirement. Students may enrol in upper division  
courses only when prerequisite have been  
completed.

Students who were admitted in fall 2006 or later are  
strongly urged to complete CMNS 363 because this  
six unit quantitative course satisfies the University's  
entire Q requirement. Also, CMNS 304W or 323W are  
strongly recommended because the completion of  
one of these courses will entirely satisfy the  
University's upper division writing requirement.

## External Requirements

In addition to the specified CMNS courses, students  
complete at least 40 units from disciplines other than  
communication including the following.

- 12 units minimum from Asia-Canada, contemporary arts, English, First Nations, French, general studies, history, humanities, Latin American development studies, linguistics, philosophy, Spanish or other languages; **or** to partially satisfy the University's breadth requirements (see "Writing, Quantitative, and Breadth Requirements" on page 7), two three-unit breadth-humanities and two three-unit breadth-social sciences courses with a minimum C- grade in each
- two science courses totalling six units; **or** to partially satisfy the University's breadth requirements (see "Writing, Quantitative, and Breadth Requirements" on page 7), two three-unit breadth-science courses with a minimum C- grade in each
- two upper division courses (minimum three units each) chosen from any department outside the school

Note that no course may be used to satisfy more than one of the above three requirements; for example, an upper division breadth-science course may be used as one of the two science courses required, or one of the two upper division non-CMNS courses required, but not both.

## Honors Program

Application forms are available from the general office and at [www.cmns.sfu.ca](http://www.cmns.sfu.ca). *The deadlines are March 15, July 15 and November 15.*

## Program Requirements

Students complete 132 total units including at least 60 upper division units, all of the communication major requirements, all with minimum CGPAs of 3.00 (overall and within the School of Communication; cumulative and at the upper division), and must include the following courses. Students who do not meet this CGPA requirement may be dropped from the program but may apply for readmission at a later date.

Students complete one of  
CMNS 362-6 Evaluation Methods for Applied Communication Research  
CMNS 363-6 Approaches to Media and Audience Research

As well, students produce an honors project by completing both of  
CMNS 497-5 Honors Research Proposal  
CMNS 498-10 Honors Research Project

Students must have completed at least 90 units with at least 20 in upper division communication before enrolling in the honors project. A plan must be approved by the faculty supervisors and the honors co-ordinator before work is begun. A pamphlet describing the honors project requirements can be obtained from the school's general office.

The school reserves the right to limit the number of honors students if faculty supervision resources are not available; priority will be given to those with a higher CGPA. Students who have difficulty finding an honors supervisor should contact the school's honors co-ordinator.

## Graduation Requirements

To receive honors in communication, students must

- meet the graduation requirements of the communication major program
- meet the honors graduation requirements of the University and the Faculty of Communication, Art and Technology including at least 60 upper division units
- successfully complete an honors project (CMNS 497 and 498)
- obtain certification by an undergraduate advisor of satisfactory program completion.

## Communication Minor Program

Admission is subject to enrolment limitations. Applicants will have a minimum 2.50 CGPA or transfer GPA upon lower division requirements completion. A minimum 2.25 CGPA is required to remain in good standing. Those who do not maintain this requirement may be dropped from the program, but may apply for readmission at a later date.

## Lower Division Requirements

Students complete, with a C- grade or better, both of  
CMNS 110-3 Introduction to Communication Studies  
CMNS 130-3 Explorations in Mass Communication

## Upper Division Requirements

Students complete four upper division CMNS courses (and the lower division prerequisites, if any). Directed study and field placement courses may not be used to meet this requirement.

## Dialogue Minor Program

Admission is subject to enrolment limitations. Applicants will have a minimum 3.00 CGPA or transfer CGPA upon completion of 50 units at Simon Fraser University and/or transfer units. A minimum 2.75 CGPA is required to remain in good standing. Those who do not maintain this requirement may be dropped from the program, but may apply for readmission at a later date.

## Upper Division Requirements

Students complete a total of 19 upper division units, including either Path A or B (see below), and one of  
CMNS 460-4 Seminar in Dialogue and Public Issues  
DIAL 460-4 Seminar in Dialogue and Public Issues

### Path A

In addition to the requirements listed above, students choosing this path must also complete all of  
DIAL 390-5 Undergraduate Semester: Dialogue  
DIAL 391-5 Undergraduate Semester: Seminar  
DIAL 392-5 Undergraduate Semester: Seminar

### Path B

In addition to the requirements listed above, students choosing this path must also complete one of  
CMNS 461-3 Field Placement in Dialogue  
DIAL 461-3 Field Placement in Dialogue

and three of  
CMNS 332-4 Communication and Rhetoric  
CMNS 347-4 Communication in Conflict and Intervention  
CMNS 425-4 Applied Communication for Social Issues  
CMNS 432-4 Public Opinion, Propaganda, and Political Communication  
CMNS 437-4 Media Democratization: From Critique to Transformation  
CMNS 447-4 Negotiation and Dialogue as Communication

Prerequisites for the above-mentioned CMNS courses may be waived for Dialogue minor students in consultation with the undergraduate advisor.

Upper division CMNS courses completed for the Dialogue minor may not count as part of the CMNS units for an honors, joint major, major, extended minor or minor (in communication or publishing).

## Publishing Minor Program

Admission is subject to enrolment limitations. Applicants will have a minimum 2.50 CGPA or transfer GPA upon lower division requirements completion. A minimum 2.25 CGPA is required to remain in good standing. Those who do not maintain this requirement may be dropped from the program, but may apply for readmission at a later date.

## Lower Division Requirements

Students complete four of the following, each with a C- grade or better. No more than two from each discipline are permitted for credit.

CMNS 110-3 Introduction to Communication Studies  
CMNS 130-3 Explorations in Mass Communication  
CMNS 230-3 Introduction to Communication Media  
CMNS 240-3 The Political Economy of Communication  
ECON 103-4 Principles of Microeconomics  
ECON 105-4 Principles of Macroeconomics  
ENGL 210-3 Writing and Critical Thinking  
LING 100-3 Communication and Language  
LING 110-3 The Wonder of Words  
LING 160-3 Language, Culture, and Society

## Upper Division Requirements

Students complete four of  
CMNS 371-4 The Structure of the Book Publishing Industry in Canada  
CMNS 372-4 The Publishing Process  
CMNS 375-4 Magazine Publishing  
CMNS 437-4 Media Democratization: From Critique to Transformation  
CMNS 472-4 Books, Markets and Readers  
CMNS 473-4 Publication Design and Print Production  
CMNS 474-4 The Business of Publishing  
CMNS 478-4 Publishing Project Group

Upper division CMNS courses completed for the publishing minor may not be used toward the school's honors, joint major, major, extended minor or minor programs.

## Communication Extended Minor Program

This program, along with another extended minor in a relevant department, may be completed as part of a Faculty of Arts and Social Sciences BA degree. See "Extended Minor Program" on page 89.

Admission is subject to enrolment limitations. Applicants will have a minimum 2.50 CGPA or transfer GPA upon completion of the lower division requirements. A minimum 2.25 CGPA is required to remain in good standing. Those who do not maintain this requirement may be dropped from the program, but may apply for readmission at a later date.

## Lower Division Requirements

Students complete the same lower division requirements as for the school's major program. See "Lower Division Requirements" on page 150.

## Upper Division Requirements

Students complete four upper division CMNS courses (and the lower division prerequisites, if any). Directed study and field placement courses may not be used to meet this requirement.

## Communication and Business Administration Joint Major Program

See "Business Administration and Communication Joint Major Program" on page 146 for requirements.

## Communication and Canadian Studies Joint Major Program

See "Joint Major Programs" on page 96 for requirements.

## Communication and Interactive Arts and Technology Joint Major Program

See "Communication and Interactive Arts and Technology Joint Major Program" on page 160.

## Communication and Latin American Studies Joint Major Program

See "Joint Major Programs" on page 122.

## Communication and Sociology/Anthropology Joint Major Program

See "Sociology or Anthropology and Communication Joint Major Program" on page 135 for requirements.

## Post Baccalaureate Diploma in Communication

This is for those who have completed a degree.

### Requirements

Successful completion of approved 30-32 units of upper division or graduate courses (normally eight four-unit courses numbered 300 or above) is required. Courses are selected with advisor consultation. At least five of the upper division courses (20 units) must be in communication; the remaining 10-12 units could be in related disciplines, such as sociology, Canadian studies, history, English, women's studies, etc.

Some other lower division courses may be required in preparation for the advanced courses. For example, a student who has a BA in an area not related to communication would be encouraged to complete at least CMNS 110 and/or 130 before enrolling in any of the 300 and 400 division courses.

For information, see "Post Baccalaureate Diploma Program" on page 7.

## Co-operative Education

Co-op education combines work experience with academic studies. The student spends alternate terms on campus and in paid, study-related jobs.

Arrangements for the work experiences are made through the school's co-op co-ordinators and the University's Office of Co-operative Education. See "Co-operative Education" on page 212.

## School for the Contemporary Arts

Room 600 SCA, 778.782.3363 Tel,  
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### Director

M.S. Gotfrit BA (C'dia), MA (McG) – music

### Professors Emeriti

S.A. Aloï BA (Cornell), MA (Col) – dance  
G. Strate BA, LLB (Alta) – dance

### Professors

C.V.A. Browne BA (RMC), MA (S Fraser) – film  
A. Clay BFA (Nova Scotia Art & Des), MFA (Br Col) – visual art  
M.S. Gotfrit BA (C'dia), MA (McG) – music  
D.K. MacIntyre BMus, MMus (Vic, BC) – music  
O. Underhill BMus (Vic, BC), MA (NY State) – music  
C. Welsby BA (Lond Inst) – film  
J. Yoon BA (Br Col), BFA (Emily Carr), MFA (C'dia) – visual art

### Associate Professors

H. Daniel MA (City University, London, UK), PhD (Brist) – dance  
A. Eigenfeldt BMus (Br Col), MA (S Fraser), DM (Northwestern) – music  
M. Eist BA (American DC), MFA (NY) – dance  
J. Garay – dance  
P. Gruben BA (Rice) – film  
D.D. Kugler BA (Ohio Northern), MFA (York, Can) – theatre  
J. Levitin BA, MA (Wash), PhD (NY State) – film\*\*  
L. Marks BA (Swarthmore), MA, PhD (Roch), Deana Wosk Professor in Art and Culture Studies  
J. Radul BA (S Fraser), MFA (Bard) – visual art  
P. Stella AB (Ill) – theatre

### Assistant Professors

S. Hill MFA (York, Can) – theatre  
R. Kitsos BA (Bard), MFA (Wash) – dance  
D. Oleksijczuk BA, MA (Tor), PhD (Br Col) – art and culture  
C. Pavsek BA (Cornell), PhD (Duke) – film

### Senior Lecturers

R. Groeneboer BA (Calvin Coll, Michigan), MSc (Wis) – film  
G. Harris – production and design, technical theatre  
B. Hegland BA (Leth), MFA (Ill) – production and design, technical theatre  
J.A. Macfarlane BA (Reed) – production and design, technical theatre  
C. Prophet BA (York, Can) – dance

### Laboratory Instructors

T. Kerr – film  
A. Smith – dance, music

### Advisor

Mr. D. Lastoria BA (S Fraser), CA 601, 778.782.3363, ca\_advisor@sfu.ca

\*joint appointment with communication  
\*\*joint appointment with women's studies

The school is committed to the study, production and promotion of contemporary art.

The school's philosophy is that the theory and practice of art, the doing and thinking, cannot be separated: all programs within the school, therefore, combine theoretical and critical study with practical experience. Theoretical and critical studies include the historical development of and the interrelationships among the arts, the process of art-making, and the relationship between art and the world within which it is made. Practical experience is available within studio or laboratory courses, and students are encouraged to acquire additional practical experience by participating in extracurricular productions, exhibitions or performances.

The school offers general interest courses and sponsors a variety of public events in order to make contemporary art more accessible to, and to provide cultural activities for, the wider community.

## Admission Requirements

Program and course admission is contingent upon University admission. Contact Student Services for admission procedures, requirements and deadlines. Entry to all programs and to many courses is by audition, interview or application. Contact the school's office for information on procedures and deadlines.

Although the University operates on a trimester system, most FPA courses are planned in a two term (fall and spring) sequence. Consequently, students enter in the fall term (September) and are advised to contact the school in the preceding January for program entry and requirements information.

## Transfer Credit and Advanced Standing

Unassigned or general elective (type 2 and 3, respectively) transfer credit awarded for courses completed at other recognized post-secondary institutions will not automatically entitle students to advanced standing in the school's programs. Advanced standing is generally given on an individual basis as a result of an audition or interview.

## Programs Offered

The school offers the following programs.

major in art and culture studies (BA)  
major in dance (BFA)  
major in film (BFA)  
major in music (BFA)  
major in theatre (BFA)  
major in visual art (BFA)  
joint major in art and culture studies and anthropology  
joint major in art and culture studies and sociology  
extended minor in dance  
extended minor in film  
extended minor in music  
extended minor in theatre  
extended minor in visual arts  
minor in art and culture studies  
minor in fine and performing arts  
minor in film and video studies  
master of fine arts (see page 280)

## About the School's Course Offerings

Students are encouraged to take advantage of interdisciplinary offerings within the school. As many programs depend on a continuing sequence of courses completed in order, students should plan carefully to gain the maximum benefit and efficiency from their study. Note that not all courses are offered every term and several are offered on a rotational basis, i.e. every third or fourth term. An advisor is available to help plan study programs.

Students are reminded that the school is an interdisciplinary fine and performing arts department, and are strongly advised to acquaint themselves with the many disciplinary courses that are available.

## Non-Specialist FPA Courses

The following FPA courses may be of particular interest to students in other departments.

School-wide courses: FPA 319W  
art and culture studies: FPA 111, 210, 289, 310, 311, 312, 313, 314, 389, 411, 412, 414, 416  
dance: FPA 120, 129, 226, 227, 228W, 229  
film: FPA 136, 137, 235, 236, 237, 238, 335, 337, 338, 436  
music: FPA 104, 140, 243, 249, 341  
theatre: FPA 150, 151, 170, 171, 257, 259, 270, 357  
visual art: FPA 160, 161, 167, 168

## Special Topics Courses

The subject matter (and prerequisites) of special or selected topics courses vary by term.

## Prior Approval Prerequisite

Where a prerequisite is or includes 'prior approval,' approval must be obtained before enrolling in the course. Contact the school for further information.

## Courses Divided by Discipline

FPA course disciplines are indicated by the middle digit of the course number.

0, 8 interdisciplinary or school-wide  
1 art and culture studies  
2 dance  
3 film



- 4 music
- 5 performance stream in theatre
- 6 visual art
- 7 production stream in theatre
- 9 video (film)

Examples: FPA 120 – dance; FPA 140 – music; FPA 111 – art and culture studies

### Suggested Courses for Interdisciplinary Requirements

For clarification, the courses listed below are the offerings from individual areas available to students in the school requiring units in other disciplines, either in studio or in theory/history. Students from the university at large may also find these courses of interest. Students are also advised that some of the courses listed below may have prerequisites.

#### Lower Division Theory and History Courses

- FPA 104-3 Music Fundamentals
- FPA 111-3 Issues in the Fine and Performing Arts
- FPA 136-3 The History and Aesthetics of Cinema I
- FPA 137-3 The History and Aesthetics of Cinema II
- FPA 140-3 Music After 1900
- FPA 167-3 Visual Art and Culture I
- FPA 168-3 Visual Art and Culture II
- FPA 210-3 Artworks, Theories, Contexts
- FPA 227-3 History of Dance: From the 20th Century to the Present
- FPA 228W-3 Dance Aesthetics
- FPA 229-3 Selected Topics in Dance I\*
- FPA 235-3 Experimental Film and Video
- FPA 236-3 Cinema in Canada
- FPA 237-3 Selected Topics in Film and Video
- FPA 244-3 Theory of Contemporary Music
- FPA 249-3 Selected Topics in Music I\*
- FPA 257-3 Context of Theatre I
- FPA 269-3 Selected Topics in Visual Arts I\*
- FPA 289-3 Selected Topics in the Fine and Performing Arts I\*

\*this course may only count in this category when it is offered as a theory/history course

#### Lower Division Studio Courses

- FPA 120-3 Introduction to Contemporary Dance
- FPA 124-3 Dance Improvisation
- FPA 129-3 Movement Fundamentals
- FPA 145-3 Introduction to Music Composition
- FPA 147-3 Introduction to Electroacoustic Music
- FPA 150-3 Introduction to Acting I
- FPA 151-3 Introduction to Acting II
- FPA 160-3 Introductory Studio in Visual Arts I
- FPA 161-3 Introductory Studio in Visual Arts II
- FPA 170-3 Introduction to Production Technology
- FPA 171-3 Stage and Production Management
- FPA 229-3 Selected Topics in Dance I\*
- FPA 232-3 Film Sound
- FPA 238-3 Screenwriting I
- FPA 243-3 Gamelan I
- FPA 247-3 Electroacoustic Music I
- FPA 249-3 Selected Topics in Music I\*
- FPA 262-3 Methods and Concepts: Drawing Practices
- FPA 263-3 Methods and Concepts: Painting Practices
- FPA 264-3 Methods and Concepts: Sculptural Practices
- FPA 265-3 Methods and Concepts: Photographic Practices
- FPA 268-3 Methods and Concepts: Spatial Presentation
- FPA 269-3 Methods and Concepts: Selected Topics
- FPA 270-3 Technical Theatre
- FPA 289-3 Selected Topics in the Fine and Performing Arts I\*
- FPA 290-3 Video Production I

\*this course may only count in this category when it is offered as a studio course

#### Upper Division Theory and History Courses

- FPA 308-4 Contemporary Arts Field School I (Theory/History)
- FPA 310-4 Interdisciplinary Methods
- FPA 311-4 Interdisciplinary Studies in the Arts
- FPA 312-3 Intermediate Seminar in Art and Culture
- FPA 313-5 Arts, Audience, Patronage, Institutions
- FPA 314-3 Readings in the History of Art and Culture
- FPA 319W-3 Critical Writing in the Arts
- FPA 335-3 Introduction to Film Theory
- FPA 337-3 Intermediate Selected Topics in Film and Video Studies
- FPA 341-3 World Music
- FPA 344-3 Contemporary Music Analysis and Criticism
- FPA 349-3 Selected Topics in Music II\*
- FPA 357-3 Context of Theatre II
- FPA 359-3 Selected Topics in Theatre\*
- FPA 366-3 Seminar in Visual Art I
- FPA 367-3 Seminar in Visual Art II
- FPA 369-3 Selected Topics in Visual Art II\*
- FPA 389-3 Selected Topics in the Fine and Performing Arts II\*
- FPA 408-4 Contemporary Arts Field School III (Theory/History)
- FPA 411-3 Interdisciplinary Topics in the Contemporary Arts
- FPA 412-4 Advanced Seminar in Art and Culture Studies
- FPA 414-3 Advanced Topic in the History of Art and Culture
- FPA 416-3 Practices in Art and Culture
- FPA 436-3 Advanced Seminar in Film and Video Studies
- FPA 457-3 Context of Theatre III

\*this course may only count in this category when it is offered as a theory/history course

#### Upper Division Studio Courses

- FPA 305-3 Explorations in Contemporary Arts I
- FPA 309-4 Contemporary Arts Field School II (Studio)
- FPA 324-3 New Dance Composition
- FPA 325-3 Special Project in Dance Composition
- FPA 338-3 Screenwriting II
- FPA 339-3 Directing and Acting for Film and Video
- FPA 343-3 Gamelan II
- FPA 349-3 Selected Topics in Music II\*
- FPA 359-3 Selected Topics in Theatre\*
- FPA 369-3 Methods and Concepts: Selected Topics\*
- FPA 375-3 Stage Design
- FPA 387-3 Digital Art
- FPA 389-3 Selected Topics in the Fine and Performing Arts II\*
- FPA 390-3 Video Production II
- FPA 405-5 Explorations in Contemporary Arts II
- FPA 409-4 Contemporary Arts Field School IV (Studio)
- FPA 425-4 Intensive Studies in Performance
- FPA 426-3 Dance/Movement Analysis
- FPA 443-3 Gamelan III
- FPA 489-5 Interdisciplinary Project in FPA

\*this course may only count in this category when it is offered as a studio course

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information.

The School for the Contemporary Arts currently offers two Q courses and two W courses:

- FPA 247-3 Electroacoustic Music I (Quantitative)
- FPA 447-3 Computer Music Composition (Quantitative)
- FPA 228W-3 Dance Aesthetics
- FPA 319W-3 Critical Writing in the Arts

### Field Schools

The school operates two bi-annual field schools. One is in Ghana and the other is in India.

The field school in Ghana, which has been part of the school since 1999, offers intensive classes, workshops and performances with a range of professors and professional artists. In addition to immersion into Ghanaian culture, the courses examine African culture, politics, music, dance, history, aesthetics, ethics and linguistics. Living in Ghana during the course intensifies every aspect of learning. Hands-on experience in world cultures enhances an interdisciplinary education.

The India field school, established in 2007, has offered courses in Indian cinema, art and culture. The field school's courses also explore the roots of contemporary Indian culture, ritual, politics, iconography and performance and have included workshops in music and dance and visits to religious rites on the Ganges River.

As well as offering disciplinary courses such as field studies, our field schools offer up to four dedicated contemporary arts field school courses. Depending on the topic, these courses may be applied toward a major as one of the required courses, as a studio or theory/history course outside the area, or as an elective. Contact the school's advisor for information.

The following courses are offered.

- FPA 308-4 Contemporary Arts Field School I (Theory/History)
- FPA 309-4 Contemporary Arts Field School II (Studio)
- FPA 408-4 Contemporary Arts Field School III (Theory/History)
- FPA 409-4 Contemporary Arts Field School IV (Studio)

For information about contemporary arts field schools, admission procedures, fees, etc., contact the office of SFU International at [www.sfu.ca/international/abroad/fieldschools](http://www.sfu.ca/international/abroad/fieldschools).

### Bachelor of Arts Program

#### Art and Culture Studies Major Program

This major leads to a bachelor of arts degree. Within the fine and performing arts, there are lively debates about the meaning and significance of individual artworks, as well as their relationships to audiences and to other forms of culture. The program investigates art and culture with attention to the historically changing forms of class, gender, race, ethnicity, sexuality and aesthetics. It provides students with the knowledge, research and communication skills needed to participate effectively in contemporary debates about art and culture. The core program includes two introductory studio courses from a multidisciplinary range of choices; these provide the experience of the creative process in dance, music, theatre, video or visual art. The program is interdisciplinary, but also provides a knowledge of and sensitivity to the distinctive qualities of specific art forms. Course selection beyond the program's core is flexible and students are encouraged to shape their studies in the school, or in the University at large.

#### Lower Division Requirements

Students complete 18 units including three of FPA 136-3 History and Aesthetics of Cinema I FPA 137-3 History and Aesthetics of Cinema II FPA 167-3 Visual Art and Culture I FPA 168-3 Visual Art and Culture II

plus

FPA 210-3 Artworks, Theories, Contexts

plus at least three units of studio courses from within the School for the Contemporary Arts

**Upper Division Requirements**

A minimum of 30 units must be completed as follows.  
FPA 310-4 Interdisciplinary Methods

plus 18 to 20 units from the following

FPA 311-4 Interdisciplinary Studies in the Arts\*  
FPA 312-3 Intermediate Seminar in Art and Culture\*  
FPA 313-5 Arts, Audience, Patronage, Institutions\*  
FPA 314-3 Readings in the History of Art and Culture\*  
FPA 319W-3 Critical Writing in the Arts  
FPA 411-3 Interdisciplinary Studies in the Contemporary Arts\*  
FPA 412-4 Advanced Seminar in Art and Culture\*  
FPA 414-3 Advanced Topic in the History of Art and Culture\*  
FPA 416-3 Practices in Art and Culture\*

(FPA 310, 311, 312, 313, 314, 315 completed prior to 99-2 will count towards this requirement.)

\*this course may be completed more than once for credit if the topic changes

**Additional Courses**

Six to eight units of additional upper division courses in the fine or performing arts must be completed. Courses in the above list of Art and Culture courses can be used to fulfil this requirement, as can other history, theory or studio courses offered by the School for the Contemporary Arts.

Relevant courses in other departments may also be used to fulfil this requirement. Student advisors in the School for the Contemporary Arts can provide students with a list of courses in other departments that are pertinent to the Art and Culture program. Students can also obtain individual approvals for courses other than FPA courses by providing course descriptions to the student advisors in the school.

Students are encouraged to plan in advance as some upper division courses may not be offered each year. Students who wish to complete upper division courses must make sure they have the disciplinary prerequisites and should be aware that studio courses may have limited enrollments.

**Art and Culture Studies Minor Program**

Within the fine and performing arts, there are lively debates about the meaning and significance of individual artworks, as well as their relationships to audiences and to other forms of culture. Art and culture studies investigates the arts with attention to the historically changing forms of class, gender, race, ethnicity, sexuality and aesthetics. This interdisciplinary program provides a knowledge of and sensitivity to the specific qualities of diverse artworks. The program is an excellent foundation for a dynamic, lifelong interest in the fine and performing arts, while complementing other programs of study.

**Lower Division Requirements**

Students are required to complete a minimum of 12 units including one of

FPA 167-3 Visual Art and Culture I  
FPA 168-3 Visual Art and Culture II

and one of

FPA 136-3 History and Aesthetics of Cinema I  
FPA 137-3 History and Aesthetics of Cinema II

and

FPA 210-3 Artworks, Theories, Contexts

plus three units of lower division history, theory, or studio courses within the School for the Contemporary Arts.

**Upper Division Requirements**

A minimum of 17 units must be completed as follows.

FPA 310-4 Interdisciplinary Methods

plus a minimum of 10 units from the following.

FPA 311-4 Interdisciplinary Studies in the Arts\*  
FPA 312-3 Intermediate Seminar in Art and Culture\*  
FPA 313-5 Arts, Audience, Patronage, Institutions\*

FPA 314-3 Readings in the History of Art and Culture\*

FPA 411-3 Interdisciplinary Studies in the Arts\*

FPA 412-4 Advanced Seminar in Art and Culture\*

FPA 414-3 Advanced Topic in the History of Art and Culture\*

FPA 416-3 Practices in Art and Culture\*

(FPA 311, 312, 313, 314, 315 completed prior to 99-2 will count toward this requirement.)

\*may be completed again for credit if topic changes

plus three units of upper division history or theory courses from within the School for the Contemporary Arts. The Art and Culture courses in the list above can be used to fulfil this requirement.

**Bachelor of Fine Arts Program****Degree Requirements**

Students must complete a minimum of 120 units, 24 of which must satisfy the writing, quantitative and breadth (WQB) requirements and 45 units must be in upper division courses.

To complete a major, students must include the following units in the required 120 units.

- dance major 78 units
- film major 75 units
- music major 72 units
- theatre major (performance stream) 74 units
- theatre major (production and design stream) 78 units
- visual arts major 74 units

**Dance Major Program**

The BFA major in dance approaches dance as an art form and integrates theory with creative and technical studio courses. Emphasis is given to contemporary dance technique, composition and experimentation. Courses are also offered in body conditioning practices, ballet, history and criticism, and movement analysis. Course work in other artistic disciplines is encouraged, and opportunities for participation in a variety of productions are available. The program is intended for students who desire to study dance in relation to other contemporary art disciplines and academic fields.

**Entry to FPA 122 Contemporary Dance I is by audition/interview** usually in early spring or late summer. Contact the school to make an appointment.

Continuation in the dance major is contingent upon the successful completion of FPA 122, 123, 124 and 129 and the approval of the Dance Area. Interviews will be held at the end of the first year and approval will be based on the student's potential, progress, academic record and suitability for the program.

Students are encouraged to plan their program in consultation with the school's advisor.

**Lower Division Requirements**

A minimum of 40 units including all of

FPA 111-3 Issues in the Fine and Performing Arts  
FPA 122-4 Contemporary Dance I  
FPA 123-4 Contemporary Dance II  
FPA 124-3 Dance Improvisation  
FPA 129-3 Fundamental Integration of Human Movement

FPA 220-4 Contemporary Dance III

FPA 221-4 Contemporary Dance IV

FPA 224-3 Dance Composition I

FPA 227-3 History of Dance: From the 20th Century to the Present

FPA 228W-3 Dance Aesthetics

plus six additional units in lower division FPA courses outside of dance as follows.

and one of

FPA 147-3 Introduction to Electroacoustic Music  
FPA 150-3 Introduction to Acting I

FPA 160-3 Introductory Studio in Visual Art I

FPA 170-3 Introduction to Production Technology

FPA 171-3 Introduction to Stage and Production Management

FPA 290-3 Video Production I

and one of

FPA 136-3 The History and Aesthetics of Cinema I

FPA 137-3 The History and Aesthetics of Cinema II

FPA 140-3 Music After 1900

FPA 167-3 Visual Art and Culture I

FPA 168-3 Visual Art and Culture II

FPA 210-3 Artworks, Theories, Contexts

FPA 247-3 Electroacoustic Music I

FPA 270-3 Production Ensemble I

FPA 271-3 Production Ensemble II

**Upper Division Requirements**

A minimum of 38 units including all of

FPA 320-4 Contemporary Dance V

FPA 321-4 Contemporary Dance VI

FPA 324-3 New Dance Composition

plus 18 units selected from the following\*

FPA 322-3 Ballet I

FPA 323-3 Ballet II

FPA 325-3 Special Project in Dance Composition

FPA 326-4 Repertory I

FPA 327-4 Repertory II

FPA 420-4 Contemporary Dance VII

FPA 421-4 Contemporary Dance VIII

FPA 425-4 Intensive Studies in Performance

FPA 426-3 Dance/Movement Analysis

FPA 427-3 Ballet III

FPA 428-3 Ballet IV

plus nine upper division FPA units including one upper division history or theory course

\*other dance related courses may be substituted with permission of the school

**Program with National Ballet School**

In addition to the BFA in dance and the extended minor, the school offers a combined degree/diploma program with the five year National Ballet School Teachers' Training Program where students initiate their studies at Simon Fraser University or at the National Ballet School (NBS). Those who begin at Simon Fraser University will spend three years at the University and two years at NBS to receive a BFA degree and a National Ballet School Teachers' Training diploma. Students who transfer to Simon Fraser University after three NBS study years will complete two years at Simon Fraser University and receive a bachelor of general studies degree and the NBS Teachers' Training Diploma.

**Dance Extended Minor Program**

This program is intended primarily for students who wish to obtain a BA degree with a view to teaching dance in the public schools. It may be used in combination with another extended minor. The program is balanced with dance technique, composition and theory, and some work in a relevant art discipline other than dance.

**Entry to FPA 122 is by audition/interview** usually scheduled for early spring and late summer. Contact the general office to make an audition appointment.

Continuation in the dance extended minor is contingent upon successful completion of FPA 122, 123, 124 and 129 and approval of the dance area. Interviews are held at the end of the first year and approval is based on the student's potential, progress, academic record and program suitability.

Students are encouraged to plan their program in consultation with the school's advisor.

Students without sufficient dance training to audition for program entry may enrol in FPA 120.

**Lower Division Requirements**

A minimum of 31 dance units including all of  
 FPA 122-4 Contemporary Dance I  
 FPA 123-4 Contemporary Dance II  
 FPA 124-3 Dance Improvisation  
 FPA 129-3 Fundamental Integration of Human Movement

FPA 220-4 Contemporary Dance III  
 FPA 221-4 Contemporary Dance IV  
 FPA 224-3 Dance Composition I

plus one of  
 FPA 227-3 History of Dance: The 20th Century  
 FPA 228W-3 Dance Aesthetics

plus one of  
 FPA 111-3 Issues in the Fine and Performing Arts  
 FPA 140-3 Music After 1900  
 FPA 150-3 Introduction to Acting I  
 FPA 170-3 Introduction to Production Technology

**Upper Division Requirements**

A minimum of 17 dance units including all of  
 FPA 320-4 Contemporary Dance V  
 FPA 321-4 Contemporary Dance VI

plus six units minimum selected from  
 FPA 322-3 Ballet I  
 FPA 323-3 Ballet II  
 FPA 325-3 Special Project in Dance Composition  
 FPA 326-4 Repertory I  
 FPA 327-4 Repertory II  
 FPA 420-4 Contemporary Dance VII  
 FPA 421-4 Contemporary Dance VIII  
 FPA 426-3 Dance/Movement Analysis

plus one upper division FPA course

**Film Major Program**

The BFA major in film provides creative, technical and analytical studies within the school's interdisciplinary setting. Film and video production courses emphasize the creation of original work and technical skills acquisition. Film courses familiarize students with the aesthetic and social issues surrounding contemporary film and video practice which are an integral part of the curriculum. Students augment the components of film and video through interdisciplinary studies and projects. Directed study courses are available for upper division students to work independently.

**Entry to all first year film production courses required for the major or extended minor is by questionnaire and interview.** Contact the school in early January prior to attendance at the University to request an information letter and questionnaire.

Film students who wish to complete the film major may apply for admission to the BFA major program after completing FPA 231, normally at the end of the second year of study. Approval will be based on the student's creative work and academic record in required lower division courses.

Students whose interest in film is related primarily to historical, critical, or theoretical aspects should see the art and culture studies major program, leading to a BA, and to the film and video studies minor.

**Lower Division Requirements**

A minimum of 44 units including the following.  
 FPA 111-3 Issues in the Fine and Performing Arts  
 FPA 130-4 Fundamentals of Film  
 FPA 131-4 Filmmaking I  
 FPA 136-3 The History and Aesthetics of Cinema I  
 FPA 137-3 The History and Aesthetics of Cinema II  
 FPA 230-5 Filmmaking II  
 FPA 231-5 Filmmaking III  
 FPA 233-2 The Techniques of Film

plus one of\*  
 FPA 235-3 Experimental Film and Video  
 FPA 236-3 Cinema in Canada  
 FPA 237-3 Selected Topics in Film and Video Studies\*\*

plus one of  
 FPA 232-3 Film Sound  
 FPA 238-3 Screenwriting I  
 FPA 290-3 Video Production I

\*with prior approval, students may substitute lower division courses from other departments devoted to a film or video topic to fulfil this requirement

\*\*may be repeated under another topic

plus six units of lower division FPA studio courses outside film. Students may apply CMNS 258 toward this requirement.

plus another FPA history or critical course outside film.

**Upper Division Requirements**

A minimum of 31 units including three of\*  
 FPA 335-4 Introduction to Film Theory\*\*  
 FPA 337-3 Intermediate Selected Topics in Film and Video Studies\*\*\*  
 FPA 436-3 Advanced Seminar in Film and Video Studies\*\*\*

\*with prior approval, students may substitute upper division courses devoted to a film or video studies topic in other departments, or in directed study in film studies, to fulfil this requirement

\*\*recommended

\*\*\*may be repeated under another topic

plus a minimum of 19 units from the following  
 FPA 332-3 Film Production Seminar  
 FPA 333-3 Cinematography and Lighting  
 FPA 334-3 Selected Topics in Film and Video Production

FPA 338-3 Screenwriting II  
 FPA 339-3 Directing and Acting for Film and Video  
 FPA 390-3 Video Production II  
 FPA 393-2 Techniques of Video  
 FPA 430-5 Filmmaking IV  
 FPA 432-5 Filmmaking V

With prior permission, a directed study course (FPA 400, 402 or 404), a film studies course, or another upper division FPA course may be substituted for one of the above.

plus one of  
 FPA 310-4 Interdisciplinary Methods  
 FPA 311-4 Interdisciplinary Studies in the Arts  
 FPA 312-3 Intermediate Seminar in Art and Culture  
 FPA 313-5 Arts, Audience, Patronage, Institutions  
 FPA 314-3 Readings in the History of Art and Culture  
 FPA 411-3 Interdisciplinary Studies in the Contemporary Arts  
 FPA 412-3 Advanced Seminar in Art and Culture Studies  
 FPA 414-3 Advanced Topic in the History of Art and Culture  
 FPA 416-3 Practices in Art and Culture

or another upper division FPA history or critical course outside film.

**Film Extended Minor Program**

This program is for students who wish to apply broad range studies from other University programs to film and video production. Film has affinities with many social sciences and humanities disciplines, as well as business and communication. Students from other contemporary arts areas may develop specific skills such as composing for film, multimedia installation, or directing actors through a film extended minor with another extended minor in an appropriate area.

**Entry to all film production courses is by questionnaire and interview.** Contact the school by early January for an information letter and questionnaire.

**Lower Division Requirements**

A minimum of 28 units including all of  
 FPA 111-3 Issues in the Fine and Performing Arts

FPA 130-4 Fundamentals of Film  
 FPA 131-4 Filmmaking I

plus two of  
 FPA 136-3 The History and Aesthetics of Cinema I  
 FPA 137-3 The History and Aesthetics of Cinema II  
 FPA 235-3 Experimental Film and Video  
 FPA 236-3 Cinema in Canada  
 FPA 237-3 Selected Topics in Film and Video Studies\*

plus at least eight units from among  
 FPA 230-5 Filmmaking II  
 FPA 231-5 Filmmaking III  
 FPA 232-3 Film Sound  
 FPA 233-2 The Techniques of Film  
 FPA 238-3 Screenwriting I  
 FPA 290-3 Video Production I

plus three units from another lower division FPA course.

\*may include film and video analysis, national cinemas, genre, political cinema, etc., and may be repeated for credit when a different topic is offered.

**Upper Division Requirements**

A minimum of 17 units including at least three of  
 FPA 332-3 Film Production Seminar  
 FPA 334-3 Selected Topics in Film and Video Production  
 FPA 338-3 Screenwriting II  
 FPA 339-3 Directing and Acting for Film and Video  
 FPA 390-3 Video Production II  
 FPA 393-2 Techniques of Video

An upper division FPA studio course outside film may be substituted for one of the above.

at least one of  
 FPA 335-4 Introduction to Film Theory  
 FPA 337-3 Intermediate Selected Topics in Film and Video Studies\*  
 FPA 436-3 Advanced Seminar in Film and Video Studies\*

plus one of  
 FPA 310-4 Interdisciplinary Methods  
 FPA 311-4 Interdisciplinary Studies in the Arts  
 FPA 312-3 Intermediate Seminar in Art and Culture  
 FPA 313-5 Arts, Audience, Patronage, Institutions  
 FPA 314-3 Readings in the History of Art and Culture  
 FPA 411-3 Interdisciplinary Studies in the Contemporary Arts  
 FPA 412-3 Advanced Seminar in Art and Culture Studies  
 FPA 414-3 Advanced Topic in the History of Art and Culture  
 FPA 416-3 Practices in Art and Culture

or another upper division FPA history or critical course outside film.

\*these courses may include studies in film and video analysis, national cinemas, genre, political cinema, etc. and may be repeated for credit when a different topic is offered.

**Note:** Courses devoted to film or video are occasionally offered by other departments. With prior permission, students may substitute one or more to fulfil requirements, up to a maximum of eight units.

**Film and Video Studies Minor Program**

This minor focuses on theoretical, analytical, historical and critical aspects of film and video.

**Lower Division Requirements**

A minimum of 12 units including both of  
 FPA 136-3 The History and Aesthetics of Cinema I  
 FPA 137-3 The History and Aesthetics of Cinema II

plus two of  
 FPA 235-3 Experimental Film and Video  
 FPA 236-3 Cinema in Canada  
 FPA 237-3 Selected Topics in Film and Video Studies\*  
 FPA 238-3 Introduction to Screenwriting

**Upper Division Requirements**

A minimum of 17 units including 12 units from  
 FPA 335-4 Introduction to Film Theory\*\*  
 FPA 337-3 Intermediate Selected Topics in Film and Video Studies\*  
 FPA 338-3 Advanced Screenwriting  
 FPA 436-3 Advanced Seminar in Film and Video Studies\*  
 plus one of  
 FPA 310-4 Interdisciplinary Methods  
 FPA 311-4 Interdisciplinary Studies in the Arts  
 FPA 312-3 Intermediate Seminar in Art and Culture  
 FPA 313-5 Arts, Audience, Patronage, Institutions  
 FPA 314-3 Readings in the History of Art and Culture  
 FPA 411-3 Interdisciplinary Studies in the Contemporary Arts  
 FPA 412-4 Advanced Seminar in Art and Culture Studies  
 FPA 414-3 Advanced Topic in the History of Art and Culture  
 FPA 416-3 Practices in Art and Culture

\*these courses may include studies in film and video analysis, national cinemas, genre, political cinema, etc. and may be repeated for credit when a different topic is offered

\*\*recommended

**Note:** Courses devoted to film or video are occasionally offered by other departments. With prior permission, students may substitute one or more of these courses to fulfil requirements, up to a maximum of eight units.

**Music Major Program**

The bachelor of fine arts – major in music is a flexible program that offers several options for the music student to pursue an interest in composition, electroacoustic music, world music or interdisciplinary collaboration. Complementary courses in music history, theory and criticism provide an integral balance to the in-depth studio nature of the program.

The program takes full advantage of the opportunities to experience and study other art forms that are provided in the School for the Contemporary Arts. Students are required to complete studio courses in other art disciplines as well as interdisciplinary courses in history, theory and criticism.

**Entry to specific courses required for the music major is by interview**, usually scheduled for early spring and late summer. Contact the general office to make an appointment.

The attention of students whose interest in music is related primarily to its historical, critical, or theoretical aspects, is directed to the art and culture studies major program, leading to a BA degree.

**Lower Division Requirements**

A minimum of 39 units including all of  
 FPA 111-3 Issues in the Fine and Performing Arts  
 FPA 140-3 Music After 1900  
 FPA 145-3 Introduction to Music Composition and Theory  
 FPA 147-3 Introduction to Electroacoustic Music  
 FPA 240-3 Contemporary Music Performance I  
 FPA 244-3 Theory of Contemporary Music

plus four of  
 FPA 243-3 Gamelan I  
 FPA 245-3 Music Composition I  
 FPA 246-3 Music Composition II  
 FPA 247-3 Electroacoustic Music I  
 FPA 248-3 Conducting I  
 FPA 249-3 Selected Topics in Music I  
 CMNS 258-3 Introduction to Electroacoustic Communication

plus two FPA studio courses outside music

plus one FPA theory or history course outside music.

**Upper Division Requirements**

A minimum of 33 upper division units must be completed. Fifteen units must be from the following.  
 FPA 340-3 Contemporary Music Performance II  
 FPA 341-3 World Music  
 FPA 343-3 Gamelan II  
 FPA 344-3 Contemporary Music Analysis and Criticism  
 FPA 345-3 Music Composition III  
 FPA 346-3 Music Composition IV  
 FPA 347-3 Electroacoustic Music II  
 FPA 348-3 Conducting II  
 FPA 349-3 Selected Topics in Music II

Nine units must be chosen from the following

FPA 400-3 Directed Study (Studio)\*  
 FPA 401-3 Directed Study (Theory/History)\*  
 FPA 402-4 Directed Study (Studio)\*  
 FPA 403-4 Directed Study (Theory/History)\*  
 FPA 404-5 Directed Study (Studio)\*  
 FPA 443-3 Gamelan III  
 FPA 445-3 Music Composition V  
 FPA 446-5 Senior Project in Music Composition  
 FPA 447-3 Computer Music Composition

plus a minimum of nine FPA units from outside music (CMNS 358 or 359 may be substituted).

\*content of directed studies courses must be approved by the music area

**Music Extended Minor Program**

Those who wish a BA general degree by completing two extended minors are directed to the music extended minor. A balanced introduction to music composition, theory, history and performance is supplied at the lower level. A less concentrated upper division allows experience in a particular area. This minor may be used for teaching in the schools.

**Entry to specific courses required for the extended minor in music is by interview**, usually scheduled for early spring and late summer. Contact the general office to make an appointment.

**Lower Division Requirements**

A minimum of 24 units including all of  
 FPA 140-3 Music After 1900  
 FPA 145-3 Introduction to Music Composition and Theory  
 FPA 147-3 Introduction to Electroacoustic Music

plus four of  
 FPA 240-3 Contemporary Music Performance I  
 FPA 243-3 Gamelan I  
 FPA 244-3 Theory of Contemporary Music  
 FPA 245-3 Music Composition I  
 FPA 246-3 Music Composition II  
 FPA 247-3 Electroacoustic Music I  
 FPA 248-3 Conducting I  
 FPA 249-3 Selected Topics in Music I

plus one FPA lower division theory or history course outside music.

**Upper Division Requirements**

A minimum of 15 units including three of  
 FPA 340-3 Contemporary Music Performance II  
 FPA 341-3 World Music  
 FPA 343-3 Gamelan II  
 FPA 344-3 Contemporary Music Analysis and Criticism  
 FPA 345-3 Music Composition III  
 FPA 346-3 Music Composition IV  
 FPA 347-3 Electroacoustic Music II  
 FPA 348-3 Conducting II  
 FPA 349-3 Selected Topics in Music II  
 FPA 443-3 Gamelan III  
 FPA 445-3 Music Composition V  
 FPA 446-5 Senior Project in Music Composition  
 FPA 447-3 Computer Music Composition

plus six additional units in upper division FPA courses. Additional music courses may be used to fulfil this requirement.

**Theatre Major Program**

Theatre students may choose a performance stream or a production and design stream. Both lead to a bachelor of fine arts with a major in theatre.

The performance stream emphasizes the development of the theatre artist. The studio courses are supplemented by courses in dramatic literature, theatre history, playmaking, and technical theatre. Courses chosen from disciplines outside theatre give the program an interdisciplinary component. Students are encouraged to participate in productions and to develop their own scripts and performance pieces.

The production and design stream provides a path for students who wish to study theatre, but prefer production and design aspects of the discipline.

Students whose interest in theatre is primarily historical, critical or theoretical are directed to the art and culture studies major program, leading to a BA.

**Lower Division Requirements for the Performance Stream**

**Entry to FPA 250, 252, 254 and to the major in theatre (performance stream) is by audition**, usually scheduled for early spring and late summer. Contact the school to make an appointment.

Students who wish to enrol in the theatre performance major normally complete FPA 150, 151, and 170, and are advised to complete other courses required for the major prior to auditioning for entry to the program.

A minimum of 41 units including all of  
 FPA 129-3 Fundamental Integration of Human Movement

FPA 150-3 Introduction to Acting I  
 FPA 151-3 Introduction to Acting II  
 FPA 170-3 Introduction to Production Technology  
 FPA 250-3 Acting I  
 FPA 251-3 Acting II  
 FPA 252-3 Playmaking I  
 FPA 253-3 Playmaking II  
 FPA 254-2 Theatre Laboratory I  
 FPA 255-3 Theatre Laboratory II  
 FPA 257-3 Context of Theatre I

plus one of  
 FPA 171-3 Stage and Production Management  
 FPA 270-3 Technical Theatre

plus two FPA studio courses other than theatre

**Upper Division Requirements for the Performance Stream**

A minimum of 33 units including all of  
 FPA 350-3 Acting III  
 FPA 351-3 Acting IV  
 FPA 354-2 Theatre Laboratory III  
 FPA 355-2 Theatre Laboratory IV  
 FPA 357-3 Context of Theatre II

plus an additional 20 units of upper division credit. Please note that no more than eight upper division units from outside FPA may be used toward the major.

**Lower Division Requirements for the Production and Design Stream**

**Entry to FPA 270 and/or 271 and to the major in theatre (production and design stream) is by interview**, usually scheduled for early spring and late summer. Contact the general office to make an appointment.

Students who wish to enrol in the theatre production and design stream major normally complete FPA 170, 171 and 150, and are advised to complete other courses required for the major prior to interviewing for entry into the program.

A minimum of 39 units including all of  
 FPA 147-3 Introduction to Electroacoustic Music

FPA 150-3 Introduction to Acting I  
 FPA 170-3 Introduction to Production Technology  
 FPA 171-3 Introduction to Stage and Production Management  
 FPA 257-3 Context of Theatre I  
 FPA 270-3 Production Ensemble I  
 FPA 271-3 Production Ensemble II  
 FPA 272-3 Production Practicum I  
 FPA 273-3 Production Practicum II

plus one of  
 FPA 120-3 Introduction to Contemporary Dance  
 FPA 124-3 Dance Improvisation  
 FPA 129-3 Fundamental Integration of Human Movement  
 FPA 226-3 Dancing in Cyberspace

plus one of  
 FPA 160-3 Introductory Studio in Visual Art I  
 FPA 161-3 Introductory Studio in Visual Art II  
 FPA 268-3 Methods and Concepts: Spatial Presentation

plus three units from any lower division FPA theory or history course outside of Theatre.

plus three units of any lower division FPA studio course outside of Theatre.

### Upper Division Requirements for the Production and Design Stream

A minimum of 39 units including all of

FPA 357-3 Context of Theatre II  
 FPA 370-3 Production Ensemble III  
 FPA 371-3 Production Ensemble IV  
 FPA 374-3 Stage Lighting  
 FPA 375-3 Stage Design

plus a minimum of nine units of Production and Design practicum from

FPA 372-3 Production Practicum III  
 FPA 373-3 Production Practicum IV  
 FPA 472-3 Production Practicum V  
 FPA 473-5 Production Practicum VI

plus one of  
 FPA 325-3 Special Project in Dance Composition  
 FPA 352-3 Playmaking III  
 FPA 353-3 Playmaking IV  
 FPA 450-3 Advanced Studio Skills  
 FPA 453-3 Theory and Practice of Directing  
 FPA 457-3 Context of Theatre III  
 FPA 470-3 Production Ensemble V  
 FPA 471-3 Production Ensemble VI  
 FPA 489-5 Interdisciplinary Project in FPA

plus 12 units of upper division FPA courses which may be drawn from any of the above or from other available FPA offerings. At least three of these units must be from an FPA theory or history course outside of Theatre.

### Theatre Extended Minor Program

This program is for students interested in technical, design and administrative aspects of theatre. Interdisciplinary requirements place theatre study in the context of contemporary art theory and practice.

### Lower Division Requirements

A minimum of 30 units including all of

FPA 150-3 Introduction to Acting I  
 FPA 170-3 Introduction to Production Technology  
 FPA 171-3 Introduction to Stage and Production Management  
 FPA 257-3 Context of Theatre I  
 FPA 270-3 Production Ensemble I  
 FPA 271-3 Production Ensemble II  
 FPA 272-3 Production Practicum I  
 FPA 273-3 Production Practicum II

plus three units from any lower division FPA theory or history course outside of Theatre

plus three units from any lower division FPA studio course outside of Theatre.

### Upper Division Requirements

A minimum of 18 units including all of

FPA 357-3 Context of Theatre II  
 FPA 374-3 Stage Lighting  
 FPA 375-3 Stage Design

plus one of

FPA 370-3 Production Ensemble III  
 FPA 371-3 Production Ensemble IV

plus one of

FPA 372-3 Production Practicum III  
 FPA 373-3 Production Practicum IV

plus one of

FPA 311-4 Interdisciplinary Studies in the Arts  
 FPA 313-5 Arts, Audience, Patronage, Institutions  
 FPA 325-3 Special Projects in Dance Composition  
 FPA 353-3 Playmaking IV  
 FPA 470-3 Production Ensemble V  
 FPA 471-3 Production Ensemble VI  
 FPA 389-3 Selected Topics in the Fine and Performing Arts II

or any other upper division FPA history or theory course outside of Theatre.

### Visual Art Major Program

The bachelor of fine arts – major in visual art prepares students to become practising artists. A combination of broad-based practical studio courses and theoretical and historical seminars prepares students to understand their production in relation to current visual art and other discipline developments. A strong emphasis is on an understanding of the position and responsibilities of the artist in contemporary society.

**Entry to the visual art major (BFA) program is granted after completion of FPA 111, 160, 161 and 168 in the first year followed by an application to FPA 260. Following the completion of FPA 260, 261 and 210 entry to the visual art major is granted based on an application. Both applications are determined by grades and portfolio assessment, usually scheduled at the end of the spring term. Contact the general office for further information.**

Methods and concepts courses are offered simultaneously as upper and lower division courses; with the exception of FPA 269/369, they may only be completed once for credit, either as a lower division course or an upper division course, but not both.

The attention of students whose interest in visual art is related primarily to its historical, critical, or theoretical aspects, is directed to the art and culture studies major program, leading to a BA degree.

### Lower Division Requirements

A minimum of 39 units including all of

FPA 111-3 Issues in the Fine and Performing Arts  
 FPA 160-3 Introductory Studio in Visual Art I  
 FPA 161-3 Introductory Studio in Visual Art II  
 FPA 167-3 Visual Art and Culture I  
 FPA 168-3 Visual Art and Culture II  
 FPA 210-3 Artworks, Theories, Contexts  
 FPA 260-3 Studio in Visual Art I  
 FPA 261-3 Studio in Visual Art II

plus three of

FPA 262-3 Methods and Concepts: Drawing Practices  
 FPA 263-3 Methods and Concepts: Painting Practices  
 FPA 264-3 Methods and Concepts: Sculptural Practices

FPA 265-3 Methods and Concepts: Photographic Practices

FPA 268-3 Methods and Concepts: Spatial Presentation

FPA 269-3 Methods and Concepts: Selected Topics\*

plus six additional units in lower division FPA courses outside of visual art. One must be a history or theory course, and one must be a studio.

### Upper Division Requirements

A minimum of 35 units including all of

FPA 360-3 Studio in Visual Art III  
 FPA 361-3 Studio in Visual Art IV  
 FPA 366-3 Seminar in Visual Art I  
 FPA 367-3 Seminar in Visual Art II  
 FPA 460-3 Studio in Visual Art V  
 FPA 461-5 Studio in Visual Art VI

plus two of

FPA 362-3 Methods and Concepts: Drawing Practices  
 FPA 363-3 Methods and Concepts: Painting Practices  
 FPA 364-3 Methods and Concepts: Sculptural Practices

FPA 365-3 Methods and Concepts: Photographic Practices

FPA 368-3 Methods and Concepts: Spatial Presentation

FPA 369-3 Methods and Concepts: Selected Topics\*

plus nine FPA upper division units including one of

FPA 310-4 Interdisciplinary Methods  
 FPA 311-4 Interdisciplinary Studies in the Arts  
 FPA 312-3 Intermediate Seminar in Art and Culture  
 FPA 313-5 Arts, Audience, Patronage, Institutions  
 FPA 314-3 Readings in the History of Art and Culture  
 FPA 411-3 Interdisciplinary Studies in the Contemporary Arts

FPA 412-3 Advanced Seminar in Art and Culture Studies

FPA 414-3 Advanced Topic in the History of Art and Culture

FPA 416-3 Practices in Art and Culture

\*may be completed more than once for credit under a different topic. Topics may change every term and include, but are not limited to, installation practices, performance practices, digital 2D practices, and time-based media practices. Contact the general office for further information.

### Visual Art Extended Minor Program

This program may interest those who wish to obtain a BA degree by completing two extended minors. The program offers a studio, history and theory courses in visual art, giving a good introduction to contemporary art issues and practices. A extended minor may be used for the purpose of teaching in the schools.

**Entry to the Visual Art Extended Minor program, after completion of FPA 111, 160, 161 and 168 in the first year, is determined by grades and portfolio assessment, usually scheduled at the end of the spring term. Contact the general office for further information.**

Methods and concepts courses are offered simultaneously as upper and lower division courses; with the exception of FPA 269/369, they may only be completed once for credit, either as a lower division course or an upper division course, but not both.

### Lower Division Requirements

A minimum of 30 units including all of

FPA 111-3 Issues in the Fine and Performing Arts  
 FPA 160-3 Introductory Studio in Visual Art I  
 FPA 161-3 Introductory Studio in Visual Art II  
 FPA 167-3 Visual Art and Culture I  
 FPA 168-3 Visual Art and Culture II  
 FPA 210-3 Artworks, Theories, Contexts  
 FPA 260-3 Studio in Visual Art I  
 FPA 261-3 Studio in Visual Art II

plus two of

FPA 262-3 Methods and Concepts: Drawing Practices  
 FPA 263-3 Methods and Concepts: Painting Practices  
 FPA 264-3 Methods and Concepts: Sculptural Practices

FPA 265-3 Methods and Concepts: Photographic Practices

FPA 268-3 Methods and Concepts: Spatial Presentation

FPA 269-3 Methods and Concepts: Selected Topics\*

**Upper Division Requirements**

A minimum of 15 units including two of  
 FPA 362-3 Methods and Concepts: Drawing Practices  
 FPA 363-3 Methods and Concepts: Painting Practices  
 FPA 364-3 Methods and Concepts: Sculptural Practices  
 FPA 365-3 Methods and Concepts: Photographic Practices  
 FPA 368-3 Methods and Concepts: Spatial Presentation  
 FPA 369-3 Methods and Concepts: Selected Topics\*

plus nine FPA upper division units including one history/theory courses.

\*may be completed more than once under a different topic. Topics may change every term and include, but are not limited to, installation practices, performance practices, digital 2D practices, and time-based media practices. Contact the school for further information.

**Minor Program**

In addition to the many Bachelor of Fine and Performing Arts extended minor programs, the school also offers the fine and performing arts minor which can be completed by FPA students or those in any other Simon Fraser University major.

**Fine and Performing Arts Minor Program**

This program accommodates a range of fine and performing arts interests, but some exposure to both the practical and theoretical aspects of art is assured by the lower division studio course requirement and the upper division seminar in art and culture studies.

**Lower Division Requirements**

A minimum of 12 FPA units must be completed including one studio course.

**Upper Division Requirements**

A minimum of 15 FPA units must be completed including at least three in upper division theory and history courses.

**Joint Major Program****Anthropology or Sociology, and Art and Culture Studies Joint Major Program**

These joint majors are interdisciplinary programs linking the study of contemporary arts with the social sciences. Students explore interrelationships between fine, performing and media arts, cultural criticism, intercultural relations, and social, economic or political processes. Alternatively, they may choose courses that pertain to one or two areas in particular.

**Art and Culture Studies Lower Division Requirements**

Students complete 18 units as follows.

plus one of

FPA 167-3 Visual Art and Culture I  
 FPA 168-3 Visual Art and Culture II

one of

FPA 136-3 History and Aesthetics of Cinema I  
 FPA 137-3 History and Aesthetics of Cinema II

plus

FPA 210-3 Artworks, Theories, Contexts

**Additional Disciplinary History Courses**

Students complete at least six units of lower division disciplinary history or theory courses from within the School for the Contemporary Arts.

**Studio Courses**

Students complete three to six units of lower division studio courses from within the school.

**Note:** For some studio courses, permission to enrol is selective and may be based on an interview or audition. Contact the school for more detail regarding specific studio courses.

**Art and Culture Studies Upper Division Requirements**

Students complete 20 units as follows.

**Interdisciplinary Theory Core**

Students complete

FPA 310-4 Interdisciplinary Methods

plus a minimum of 16 units chosen from

FPA 311-4 Interdisciplinary Studies in the Arts\*  
 FPA 312-3 Intermediate Seminar in Art and Culture\*  
 FPA 313-5 Arts, Audience, Patronage, Institutions\*  
 FPA 314-3 Readings in the History of Art and Culture\*  
 FPA 337-3 Intermediate Selected Topics in Film and Video Studies\*

FPA 390-3 Video Production II

FPA 393-2 Techniques of Video

FPA 411-3 Interdisciplinary Studies in the

Contemporary Arts\*

FPA 412-4 Advanced Seminar in Art and Culture\*

FPA 414-3 Advanced Topic in the History of Art and Culture\*

FPA 416-3 Practices in Art and Culture\*

FPA 436-3 Advanced Seminar in Film and Video Studies\*

**Note:** some courses have prerequisites beyond those required for the joint major program requirements

\*may be completed more than once if topic changes

**Anthropology Lower Division Requirements**

Students complete 20 units including

SA 101-4 Introduction to Anthropology (A)

SA 201W-4 Anthropology and Contemporary Life (A)

SA 255-4 Introduction to Social Research (S or A)

plus two additional 200 division A and/or S courses.

**Anthropology Upper Division Requirements**

Students complete 20 units including both of

SA 301-4 Contemporary Ethnography (A)

SA 356W-4 Ethnography and Qualitative Methods (S or A)

SA 402-4 The Practice of Anthropology (A)

and eight additional upper division units chosen from the Calendar list of anthropology (A) courses, or (S or A) courses, or (S or A) courses when they are designated as anthropology.

**Sociology Lower Division Requirements**

Students complete 19 units including all of

SA 150-4 Introduction to Sociology (S)

SA 250-4 Introduction to Sociological Theory (S)

SA 255-4 Introduction to Social Research (S or A)

STAT 203-3 Introduction to Statistics for the Social Sciences

plus four units chosen from any 200 division course in sociology and/or anthropology.

**Sociology Upper Division Requirements**

Students complete 20 units including both of

SA 350-4 Classical Sociological Thought (S)

SA 355-4 Quantitative Methods (S or A)

plus an additional 12 units chosen from the Calendar list of sociology (S) courses, or (S or A) courses, (S or A) courses when they are designated as sociology.

**Praxis Centre for Screenwriters**

Suite 3120, 515 West Hastings Street, Vancouver, BC, V6B 5K3, 778.782.7880 Tel, 778.782.7882 Fax, www.praxisfilm.com

**Director**

P. Gruben BA (Rice)

Praxis is a professional development workshop for screenwriters and filmmakers. Intensive non-credit workshops are held twice a year for writers whose feature film scripts have been chosen through a national competition. In addition, Praxis offers public seminars throughout the year and maintains a reference library of film scripts and other materials related to film production and studies.

**School of Interactive Arts and Technology**

Simon Fraser University Surrey, Central City,  
 250-13450 102nd Avenue, Surrey, BC V3T 0A3,  
 778.782.7474 Tel, 778.782.7488 Fax, www.siat.sfu.ca

**Director**

J. Bowes AB (Hamilton College), MSc (Syr), PhD (Mich State)

**Professors Emeriti**

T.W. Calvert BSc(Eng) (Lond), MSEE (Wayne), PhD (Carnegie Tech), PEng

J.C. Dill BASC (Br Col), MS (N Carolina), PhD (Cal Tech), PEng

**Professors**

J. Bowes AB (Hamilton College), MSc (Syr), PhD (Mich State)

C. Geisler BA (Carleton Coll), MS (W Illinois), PhD (Carnegie-Mellon), Dean of Communication, Art and Technology

R. Woodbury BArch (Car), MS, PhD (Carnegie-Mellon)

**Associate Professors**

S. DiPaola BSc (NY State), MA (NY Tech)

B.D. Fisher BA (Hiram Coll), PhD (Calif)

D.J. Gromala BFA (Mich), MFA (Yale), PhD (Plym), Canada Research Chair

M. Hatala MSc, PhD (Kosice Tech)

T. Schiphorst BGS, MA (S Fraser), PhD (Plymouth)

C. Shaw BMath (Wat), MSc, PhD (Alta)

R. Wakkary BFA (Nova Scotia Art & Des), MFA (NY State)

**Assistant Professors**

A.N. Antle BA, BASc (Wat), PhD (Br Col)

L.R. Bartram BA (Br Col), MMath (Wat), PhD (S Fraser)

B. Ben Youssef BSc, MSc, PhD (Houston)

J. Bizzocchi BA (Mich), MS (MIT)

M.S. El-Nasr BSc (American Cairo), MSc (Texas A&M), PhD (Northwestern)

H.I. Erhan BArch (Mid East Tech, Ankara), MCSM (Clemson), PhD (Carnegie-Mellon)

J. McCracken BSc (Wash), PhD (Open, UK)

P. Pasquier BA (Nantes), BA (Louvain), MSc (Sabatier), MSc (SUPAERO), PhD (Laval)

A.D.N. Rajah BSc, MFA (Lond)

B. Riecke BA, MSc, PhD (Tübingen)

**Advisor**

Room 2565, 250-13450 102nd Avenue, Surrey, BC  
V3T 0A3, 778.782.7444 Tel, 778.782.7478 Fax,  
siat\_advising@sfu.ca, www.siat.sfu.ca

The School of Interactive Arts and Technology offers an undergraduate degree that comprises three concentrations: design, media arts and informatics. The school offers a bachelor of science and bachelor of arts degree in interactive arts and technology.

**Programs Offered**

bachelor of arts with major in interactive arts and technology  
bachelor of arts (honors) in interactive arts and technology  
bachelor of science with major in interactive arts and technology  
bachelor of science (honors) in interactive arts and technology  
minor in interactive arts and technology

The following phased out programs are available only to students admitted in September 2002 or earlier.

bachelor of science (information technology, TechBC)  
bachelor of science (interactive arts, TechBC)

**Admission Requirements**

Admission to the school is via three routes.

**Route 1**

- direct admission from BC high school 12 or equivalent high school preparation in accordance with the requirements listed under the *Admission and Readmission* section (see "British Columbia and Yukon Applicants" on page 20).

**Route 2**

- internal transfer from another Simon Fraser University program; the normal choice will be TechOne.

**Route 3**

- direct transfer from another post-secondary institution.

In routes 2 and 3, students apply to either the BA or BSc after completing 18 units of the lower division requirements listed below, or equivalents. In route 2, a minimum of six units of IAT course work is required

Admission is competitive and based on the cumulative grade point average. Students whose first admission attempt is unsuccessful may improve their average by completing additional courses.

**Writing, Quantitative, and Breadth Requirements**

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7.

**Major Program**

Students complete the following.

- lower division requirements of 12 units of approved first year courses and the SIAT core requirements
- upper division requirements of at least one of the three concentrations in SIAT
- lower and upper division requirements of either the BA or BSc degree program
- at least 120 units including 45 upper division units.

Students enter this major by meeting the admission requirements specified above. Students will normally apply to either the BA or BSc program after completion of first year or its equivalent.

**Lower Division Core Requirements**

Students complete 12 units of approved first year course work showing evidence of breadth, communication, teamwork and project skills. The TechOne program, with a suitable choice of electives, meets these requirements by design.

SIAT lower division core requirements are as follows.

Students complete all of  
IAT 100-3 Systems of Media Representations  
IAT 102-3 Graphic Design  
IAT 265-3 Multimedia Programming for Art and Design (or other approved second year programming course)\*

plus an approved introduction to programming course (CMPT 120 or equivalent\*)

plus an introductory course in human computer interaction and cognition (IAT 201 or equivalent\*)

plus introductory courses reflecting the school's concentrations (IAT 233, 202, 267\*)

plus an introductory art and culture course (IAT 222 or equivalent)

plus an introductory designing information interfaces course (IAT 235 or equivalent)

\*these courses or their equivalents must have a science designation

**Upper Division Core Requirements****Three Concentrations**

A BSc and BA with a major or honors is offered with three concentrations: design, media arts, informatics (see below). All share the fundamental concern of people using technology in context. Each draws from distinct patterns of scholarship and thinking. Each has its own academic emphasis leading directly to its particular pattern of study and graduate outcome.

**Concentration in Media Arts**

This concentration studies the creation, analysis and understanding of new media. New media environments are both computational artifacts and cultural experiences that include historical, social, aesthetic, and economic processes. Graduates will be skilled in the critical analysis and making of new media forms such as electronic games, digital video, computer animation, and interactive multimedia.

Students in this concentration complete all of

IAT 313-3 Narrative and New Media  
IAT 320-3 Body Interface  
IAT 343-3 Animation  
IAT 344-3 Moving Images  
IAT 443-3 Interactive Video  
IAT 445-3 Immersive Environments

**Concentration in Informatics**

This concentration covers technological systems used in work, learning and play situations. Its emphasis is on system building with particular emphasis on how people use systems, how to design and program user-centered systems, and how to represent and reason about the objects and environments that people use. Graduates will make systems that people find useful and engaging.

Students in this concentration must complete all of  
IAT 351-3 Advanced Human-Computer Interaction  
IAT 352-3 Knowledge Media Architectures  
IAT 355-3 Introduction to Visual Analytics  
IAT 410-3 Advanced Game Design  
IAT 452-3 Developing Design Tools  
IAT 455-3 Computational Media

**Concentration in Design**

This concentration focuses on the design and use of interactive products and systems. It emphasizes designing and understanding all aspects of successful designs. Graduates will demonstrate ability in contemporary design from requirements through design to critique and evaluation.

Students in this concentration must complete all of  
IAT 333-3 Interaction Design Methods  
IAT 334-3 Interface Design  
IAT 336-3 Materials in Design  
IAT 337-3 Representation and Fabrication  
IAT 338-3 Interactive Objects and Environments  
IAT 431-3 Speculative Design

**BSc Degree Specific Requirements**

Students complete both lower and upper division core requirements as specified above, plus the following.

**Lower Division Requirements**

MACM 101-3 Discrete Mathematics I (or equivalent)

plus one additional three-unit lower division science course from computing science, engineering science, kinesiology, mathematics, statistics, or physics.

**Upper Division Requirements**

Students complete both of  
IAT 402-3 Interdisciplinary Design Studio I (Science)  
IAT 404-3 Interdisciplinary Design Studio II (Science)

plus 24 units chosen from the following, 18 units of which must be IAT courses.

IAT 333-3 Interaction Design Praxis: Practice and Methods

IAT 337-3 Representation and Fabrication  
IAT 351-3 Advanced Human-Computer Interaction

IAT 352-3 Knowledge Media Architectures

IAT 355-3 Introduction to Visual Analytics

IAT 410-3 Advanced Game Design

IAT 432-3 Design Evaluation

IAT 452-3 Developing Design Tools

IAT 455-3 Computational Media

IAT 484-3 Special Topics in Technology in Art and Design

plus any upper division course from computing science, engineering science, kinesiology, management and systems science, mathematics, cognitive science or psychology.

**BA Degree Specific Requirements**

The BA requires both lower and upper division core requirements as specified above, plus the following.

**Lower Division Requirements**

Students complete both of

IAT 206-3 Media Across Cultures (or equivalent)  
MATH 130-3 Geometry for Computer Graphics (or equivalent)

**Upper Division Requirements**

Students complete both of  
IAT 403-3 Interdisciplinary Design Studio I (Arts)  
IAT 405-3 Interdisciplinary Design Studio II (Arts)

plus 24 units chosen from the following, 18 units of which must be IAT courses

IAT 312-3 Foundations of Game Design

IAT 313-3 Narrative and New Media

IAT 320-3 Body Interface

IAT 334-3 Interface Design

IAT 343-3 Animation

IAT 344-3 Moving Images

IAT 431-3 Speculative Design

IAT 443-3 Interactive Video

IAT 445-3 Immersive Environments

IAT 483-3 Special Topics in New Media Environments

plus any upper division course from communication, cognitive science, contemporary arts, human geography, philosophy, business, or psychology

**Honors Program**

An honors degree is available in all three concentrations: design, media arts, and informatics.

**Lower Division Requirements**

Students complete the same lower division requirements as for the major program (see above).

## Upper Division Requirements

Students complete the requirements for a major plus additional IAT electives to total 48 upper division units, and complete the honors research project sequence (IAT 490, 491), which is an individually supervised study and research project for honors students only. In addition, students complete sufficient unspecified upper division courses to total 60, and unspecified courses at any division to total 132 units overall. For honors, a 3.0 or better CGPA and upper division grade point average (UDGPA) is required.

## Minor Program

### Lower Division Requirements

Students complete nine units from the major program's lower division core by choosing three of IAT 100-3 Systems of Media Representations  
IAT 102-3 Graphic Design  
IAT 201-3 Human-Computer Interaction and Cognition  
IAT 202-3 New Media Images  
IAT 222-3 Interactive Arts  
IAT 233-3 Spatial Design  
IAT 235-3 Information Design  
IAT 265-3 Multimedia Programming for Art and Design  
IAT 267-3 Introduction to Technological Systems

### Upper Division Requirements

Students complete 15 upper division IAT units. It should be recognized that some upper division courses have lower division prerequisites.

## Communication and Interactive Arts and Technology Joint Major Program

This BA or BSc program offers in-depth training in new media, design and informatics, and combines this with an understanding about how information is created, coded, communicated and controlled. Program graduates benefit from a unique mix of technical skill, communication theory, and practice from across traditional and new media.

### Communication

**Note:** CMNS directed studies and field placement courses cannot be used for credit in this program.

### Lower Division Requirements

Students complete both of  
CMNS 110-3 Introduction to Communication Studies  
CMNS 130-3 Explorations in Mass Communication

plus six 200 division CMNS courses totalling 18 units including

CMNS 253-3 Introduction to Information Technology: The New Media

and one of

CMNS 220-3 Understanding Television

CMNS 221-3 Media and Audiences

CMNS 223-3 Advertising as Social Communication

CMNS 235-3 Introduction to Journalism in Canada

and one of

CMNS 230-3 The Cultural Industries in Canada: Global Context

CMNS 240-3 The Political Economy of Communication

and one of

CMNS 226-3 Digital Media Communication Techniques

CMNS 258-3 Introduction to Electroacoustic Communication

CMNS 259-3 Acoustic Dimensions of Communication I

and two of

CMNS 260-3 Empirical Communication Research Methods

CMNS 261-3 Documentary Research in Communication

CMNS 262-3 Design and Method in Qualitative Communication Research

### Upper Division Requirements

Students complete five CMNS courses totalling 22 units including one of

CMNS 362-6 Evaluation Methods for Applied Communication Research

CMNS 363-6 Approaches to Media and Audience Research

and any two upper division four unit CMNS courses of the student's choice

and two courses in any one of the following concentrations.

#### Media and Culture Concentration

CMNS 326-4 Applied Media Workshop: On the Hill

CMNS 358-4 Sound Recording: Theory and Design

CMNS 426-4 Video Design for Social Communication

CMNS 428-4 Media Analysis Project Group

CMNS 437-4 Media Democratization: From Critique to Transformation

#### Technology and Society Concentration

CMNS 353-4 Social Contexts of Information Technology

CMNS 354-4 Communication and Social Issues in Design

CMNS 358-4 Sound Recording: Theory and Design

CMNS 359-4 Acoustic Dimensions of Communication II

CMNS 446-4 The Communication of Science and the Transfer Of Technology

CMNS 453-4 Issues in the Information Society

CMNS 454-4 Computer Mediated Work and Workplace Communication

CMNS 455-4 Women and New Information Technologies

#### Political Economy and Policy Concentration

CMNS 333-4 Broadcast Policy and Regulation in the Global Context

CMNS 353-4 Social Contexts of Information Technology

CMNS 433-4 Issues in Communication and Cultural Policy

CMNS 444-4 Political Economy of International Communication

CMNS 446-4 The Communication of Science and the Transfer Of Technology

CMNS 455-4 Women and New Information Technologies

## Interactive Arts and Technology

### Lower Division Requirements

Students complete all of

CMPT 120-3 Introduction to Computing Science and Programming I

IAT 100-3 Systems of Media Representation

IAT 102-3 Graphic Design

IAT 201-3 Human-Computer Interaction and Cognition

IAT/CMPT 265-3 Multimedia Programming for Art and Design

and one of

IAT 222-3 Interactive Arts

IAT 235-3 Information Design

and one of

MACM 101-3 Discrete Mathematics I (for BSc degree)

MATH 130-3 Geometry for Computer Graphics (for BA degree)

### Concentrations

Students choose one of three SIAT concentrations, the requirements of which are shown below.

For the media arts concentration, students complete IAT 202-3 New Media Images

or for the design concentration, students complete IAT 233-3 Spatial Design

or for an informatics concentration, students complete IAT 267-3 Introduction to Technological Systems

### Upper Division Requirements

For a BSc degree\*, students must complete both of IAT 402-3 Interdisciplinary Design Studio I (Science)  
IAT 404-3 Interdisciplinary Design Studio II (Science)

or for a BA degree, students must complete both of IAT 403-3 Interdisciplinary Design Studio I (Arts)  
IAT 405-3 Interdisciplinary Design Studio II (Arts)

\*for the BSc degree, students must ensure that they satisfy the complete BSc requirement of 30 upper division units as specified in the School of Interactive Arts and Technology bachelor of science requirements (see "BSc Degree Specific Requirements" on page 159). This may require completing additional courses beyond those required for this joint major program.

plus five courses totalling 15 units in any area of concentration as shown below.

#### Design Concentration

If students choose this concentration, then they must complete five of

IAT 333-3 Interaction Design Methods

IAT 334-3 Interface Design

IAT 336-3 Materials in Design

IAT 337-3 Representation and Fabrication

IAT 338-3 Interactive Objects and Environments

IAT 431-3 Speculative Design

#### Informatics Concentration

If students choose this concentration, then they must complete five of

IAT 351-3 Advanced Human-Computer Interaction

IAT 352-3 Knowledge Media Architectures

IAT 355-3 Introduction to Visual Analytics

IAT 410-3 Advanced Game Design

IAT 452-3 Developing Design Tools

IAT 455-3 Computational Media

#### Media Arts Concentration

If students choose this concentration, then they must complete five of

IAT 313-3 Narrative and New Media

IAT 320-3 Body Interface

IAT 343-3 Animation

IAT 344-3 Moving Images

IAT 443-3 Interactive Video

IAT 445-3 Immersive Environments

## Interactive Arts and Technology and Business Administration Joint Major Program

This BA, BSc, or BBA program produces well-rounded graduates with expertise in the school's concentrations as well as solid business knowledge. All programs are human-centred and technology oriented. Combining these aspects with business knowledge prepares for industry leadership positions, and provides a strong understanding of how to deploy design processes in larger managerial and technological contexts. As well, students will identify market and funding opportunities.

### Minimum Grade Requirement

Students must achieve a minimum C- grade (or higher) in all required courses.



## Business Administration

### Lower Division Requirements

Students complete all of  
 BUS 207-3 Managerial Economics  
 BUS 251-3 Financial Accounting I  
 BUS 254-3 Managerial Accounting I  
 BUS 272-3 Behaviour in Organizations  
 ECON 103-4 Principles of Microeconomics  
 ECON 105-4 Principles of Macroeconomics  
 MATH 157-3 Calculus for the Social Sciences I  
 and one of  
 BUEC 232-4 Data and Decisions I  
 STAT 270-3 Introduction to Probability and Statistics  
 plus a 100 or 200 division three-unit course that carries a writing designation.

### Upper Division Requirements

Students complete all of  
 BUS 303-3 Business, Society and Ethics  
 BUS 312-4 Introduction to Finance  
 BUS 343-3 Introduction to Marketing  
 BUS 393-3 Commercial Law  
 BUS 478-3 Seminar in Administrative Policy  
 and one of  
 BUS 374-3 Organization Theory  
 BUS 381-3 Introduction to Human Resource Management  
 plus an additional 400 division three-unit BUS course  
 BUS 360W is highly recommended.

In addition to the above, students may also choose to complete a business administration concentration, but additional courses are required (see "Areas of Concentration" on page 145).

## Interactive Arts and Technology

### Lower Division Requirements

Students complete all of  
 CMPT 120-3 Introduction to Computing Science and Programming I  
 CMPT/IAT 265-3 Multimedia Programming for Art and Design  
 IAT 100-3 Systems of Media Representation  
 IAT 102-3 Graphic Design  
 IAT 201-3 Human-Computer Interaction and Cognition  
 IAT 235-3 Information Design

#### Concentrations

Students are also required to choose one of three SIAT concentrations, the requirements of which are shown below.

For those who choose a media arts concentration, students complete  
 IAT 202-3 New Media Images

or for the design concentration, students complete  
 IAT 233-3 Spatial Design

or for the informatics concentration, students complete  
 IAT 267-3 Introduction to Technological Systems

### Upper Division Requirements

#### BSc Requirements

Students who are pursuing a BSc degree complete both of  
 IAT 402-3 Interdisciplinary Design Studio I (Science)  
 IAT 404-3 Interdisciplinary Design Studio II (Science)  
 and also must ensure that the required 30 upper division units, as specified in the SIAT BSc major program, are completed (see "Major Program" on

page 159. Additional courses beyond those required for the joint major program may be necessary.

#### BA Requirements

Students pursuing a BA degree complete both of  
 IAT 403-3 Interdisciplinary Design Studio I (Arts)  
 IAT 405-3 Interdisciplinary Design Studio II (Arts)

#### Concentrations

As in the lower division requirements, students are required to choose one of three SIAT concentrations in the upper division.

For the design concentration, students complete five of  
 IAT 333-3 Interaction Design Methods  
 IAT 334-3 Interface Design  
 IAT 336-3 Materials in Design  
 IAT 337-3 Representation and Fabrication  
 IAT 338-3 Interactive Objects and Environments  
 IAT 431-3 Speculative Design

or for the informatics concentration, students complete five of  
 IAT 351-3 Advanced Human-Computer Interaction  
 IAT 352-3 Knowledge Media Architectures  
 IAT 355-3 Introduction to Visual Analytics  
 IAT 410-3 Advanced Game Design  
 IAT 452-3 Developing Design Tools  
 IAT 455-3 Computational Media

or for the media arts concentration, students complete five of  
 IAT 313-3 Narrative and New Media  
 IAT 320-3 Body Interface  
 IAT 343-3 Animation  
 IAT 344-3 Moving Images  
 IAT 443-3 Interactive Video  
 IAT 445-3 Immersive Environments

## Co-operative Education

Arrangements for the work experiences are made through the school's co-op co-ordinators and the University's office of Co-operative Education. See "Co-operative Education" on page 212.

## TechOne Program

Simon Fraser University Surrey, Central City,  
 5385-13450 102nd Avenue, Surrey, BC V3T 0A3,  
 778.782.7412 Tel, 778.782.7557 Fax,  
 www.sfu.ca/techone, techone@sfu.ca

*Program Director*  
 (to be announced)

*Advisor*  
 A. Stewart BA (S Fraser), 5388 Central City,  
 778.782.7435 Tel, 778.782.7557 Fax,  
 techone\_advising@sfu.ca

TechOne is an innovative and challenging first year cohort program offered by the Faculty of Communication, Art and Technology at Simon Fraser University Surrey. TechOne offers a broad foundation and introduction to university for students who are curious about how technology, design and people influence one another. TechOne specifically prepares students for second year studies in business, communication, computing science, engineering science, and interactive arts and technology; however, students interested in any program at Simon Fraser University may choose TechOne as their first year of studies.

TechOne is an interdisciplinary cohort program where all students complete courses in smaller groups together with a set of other first year students. Access to all TechOne core courses is guaranteed.

### First Term Core

The first term of TechOne consists of two or more courses selected from the following set of three, plus electives, which may be chosen with a view to the student's intended subsequent course of study.

CMPT 120-3 Introduction to Computing Science and Programming I<sup>1</sup>

TECH 101W-3 Communication, Teamwork and Collaborative Process

TECH 106-3 Spatial Thinking and Communicating

<sup>1</sup>Students who already have a substantial background in computing should complete CMPT 126 in place of CMPT 120. See the self test at [www.cs.sfu.ca/undergrad/advising/placement.html](http://www.cs.sfu.ca/undergrad/advising/placement.html)

### Second Term Core

The second term of TechOne consists of two or more courses selected from the following set of three, plus electives, which may be chosen with a view to the student's intended subsequent course of study.

MACM 101-3 Discrete Mathematics I

TECH 114-3 Technology in Everyday Contexts

TECH 124 Design Thinking (or a discipline-specific project course<sup>2</sup>)

<sup>2</sup>The choice of a design/project course may be determined by the student's intended program major. ENSC 182 is required for mechatronics students; CMPT 150 for computing science students.

### TechOne Elective Requirements

In addition to core requirements, students choose electives that will help complete the lower division requirements of their program major. If students have not yet chosen a program major, a set of qualifying electives will be recommended. Students choose the number of electives they complete in any term and may complete electives at any campus.

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. The TECH courses are designed to help with completion of these general graduation requirements. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information.

### After TechOne

Some students enter TechOne having already been admitted to a degree program. Other students will wait until completion of TechOne to apply for admission to a degree program. Either way, TechOne students will bring an understanding of how technology and people interact, as well as a toolkit of critical thinking and communication skills to their second year studies. TechOne will specifically help to prepare students who are interested in degree programs in business, communication, computing science, engineering, or interactive arts and technology. These programs may be subject to enrolment limitations, with competitive entry standards based on academic performance.

# Faculty of Education

8501 Education Building, 778.782.3395 Tel,  
778.782.3203 Fax, www.educ.sfu.ca

## Dean

K.C. Magnusson BEd, MEd (Regina), PhD (Alta)

## Associate Deans

S.C. de Castell BA (Sir G Wms), MA, PhD (Lond)  
D. Paterson BEd (Alta), MA, PhD (Br Col)

## Professors Emeriti

S. Bailin BA, BEd, MEd, PhD (Tor)  
P.E.F. Coleman BA, MA, EdD (Br Col)  
M. Gibbons BA (Br Col), MA (Wash), EdD (Harv)  
A.O. Horvath BA (Sir G Wms), MSW (McG),  
EdD (Br Col)  
A.C. Kazepides BA (Athens), MEd, EdD (Temple)  
M. Manley-Casimir BA (Exe), MEd (Br Col), PhD  
(Chic), LL.M (Br Col)  
M. McClaren BEd, PhD (Br Col)  
P. Shaker BA, MA, PhD (Ohio State)  
S. Wassermann BS, MS (CCNY), EdD (NY)  
M.F. Wideen BA, BEd, MEd (Sask), PhD (Colorado)  
B.Y.L. Wong BA (Keele), MA (Vic, BC), EdD (Br Col)

## Professors

R. Barrow BA (Oxf), PhD (Lond), FRSC  
D.H. Dagenais BEd, MA (McG), PhD (Montr)  
S.C. de Castell BA (Sir G Wms), MA, PhD (Lond)  
K. Egan BA (Lond), PhD (Cornell), FRSC, Canada  
Research Chair  
I. Geva-May BA (Jerusalem), MA (Haifa), PhD (Manc)  
P.P. Grimmer BA (Newcastle, UK), BEd (Keele), MA,  
MEd (Alta), EdD (Br Col)  
D. Kaufman BEng, MEng (McG), EdD (Br Col)  
K.C. Magnusson BEd, MEd (Regina), PhD (Alta)  
C.M. Mamchur BA, BEd, MEd (Sask), EdD (Flor)  
D. Moore BA, MA, PhD (Stendhal)  
S. Richmond BEd, (Calg), MEd (Nott), PhD (Calg)  
Y. Senyshyn BEd, MusM, EdD (Tor)  
J.H. Sugarman BA (Wat), MA, PhD (S Fraser)  
K. Toohey BA, MEd (Alta), PhD (Tor)  
P.H. Winne BEd, MEd (Bucknell), PhD (Stan),  
Canada Research Chair  
R. Zazkis BA, MA, DSc (Haifa Technion)

## Associate Professors

C.L. Amundsen BA (Wash), MEd (Alaska),  
PhD (Montr)  
H. Bai BA (Calg), PhD (Br Col)  
C.W. Bingham BA (Whitman), MA, PhD (Wash)  
S.R. Campbell BA (Calg), PhD (S Fraser)  
W. Cassidy BA, MEd (S Fraser), PhD (Chic)  
R. Frie BA (Lond), MPhil, PhD (Camb), PsyD  
(G Washington)  
M.J. Hoskyn BHE, MA (Br Col), PhD (Calif)  
L. Kanevsky BA (S Fraser), MASpEd (San Diego),  
MPhil, PhD (Col)  
L. LaRocque BEd (McG), MA (Vic, BC),  
PhD (S Fraser)  
L.J. Le Mare BA (S Fraser), MA, PhD (Wat)  
A.M. MacKinnon BSc, BEd, MSc (Calg), EdD (Br Col)  
J. Nesbit BA (Br Col), MEd, PhD (Alta)  
P. Neufeld BEd (Br Col), MEd, PhD (N Carolina)  
D.K. O'Neill BSc (Brock), PhD (Ill)  
S.J. Smith BEd (Kelvin Grove CAE), BHMS, MEd  
(Qld), PhD (Alta)  
C. Snowber BA (SEMmass), MA (Gordon-Conwell),  
PhD (S Fraser)  
D. Zandvliet BSc (Guelph), MA (Vic, BC),  
PhD (Curtin)

## Assistant Professors

K. Beck BA (SLanka), MA, PhD (S Fraser)  
S. Blenkinsop BSch (Qu), MS (Minn), MEd,  
EdD (Harvard)  
A. Chinnery BEd, MEd (Alta), PhD (S Fraser)

L. Fels BA (Qu), MA (Car), PhD (Br Col)  
M. Fettes MA (Camb), MSc (Br Col), PhD (Tor)  
H. Han BA, MA (EChinaN), PhD (Tor)  
R. Ilieva BA (Constantine), MA, PhD (S Fraser)  
M. Jacquet BA, MSc, PhD (Montr)  
P.A. Keats BEd (Calg), MA, PhD (Br Col)  
V. Kelly BA (Dal), MA, PhD (Tor)  
D.A. Laitsch BA (VPI&SU), MEd (Virginia),  
PhD (American DC)  
P. Liljedahl BSc, PhD (S Fraser)  
M.J. MacDonald BEd, MA, PhD (Vic, BC)  
E. Marshall BA, MA (Evergreen), PhD (Ohio State)  
S. Marshall BA (Manc), MA, PhD (Lond)  
M. Nilson BA (Wayne), MA (NMexicoState),  
PhD (Nevada)  
M. Pidgeon BSc, MEd (Nfld), PhD (Br Col)  
N. Popadiuk BA, BEd, MA (Br Col), PhD (Calg)  
C. Sabatier BA, MA, PhD (Stendhal)  
M.J. Schmidt BEd, MEd, PhD (Tor)  
O. Sensoy BA (Br Col), MA, PhD (Wash)  
N. Sinclair BA (McG), MSc (S Fraser), PhD (Qu)  
L. Sterling BA (S Fraser), MA, PhD (Br Col)  
S. Vámos BPE (McM), MSc (Canisius), EdS,  
EdD (Sarasota)  
D. van der Wey BGS, MA (S Fraser), PhD (Br Col)  
A.F. Wise BS (Yale), MS, PhD (Indiana)

## Senior Lecturers

G.M. Ling BA, MA (Car), PhD (S Fraser)  
D. Paterson BEd (Alta), MA, PhD (Br Col)

## Undergraduate Degrees Offered

bachelor of education (honors)  
bachelor of education  
bachelor of general studies (education)

## Diplomas and Certificate Offered

certificate in literacy instruction  
post baccalaureate diploma (general)  
post baccalaureate diploma in counselling and human  
development  
post baccalaureate diploma in early childhood  
education  
post baccalaureate diploma in special education  
post baccalaureate diploma in environmental  
education

## Undergraduate Programs

8631 Education Building, 778.782.3614 Tel,  
778.782.3829 Fax, www.educ.sfu.ca/ugradprogs  
15th floor Central City, 250–13450 102 Avenue,  
Surrey, BC V3T 0A3, 778.782.8124 Tel, 778.782.8119  
Fax

## Director

D. Paterson BEd (Alta), MA (Br Col), PhD (Br Col)

## Advisor

Ms. J. Breadon, 8631 Education Building,  
778.782.3436 Tel, 778.782.3829 Fax,  
breadon@sfu.ca

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil  
writing, quantitative and breadth requirements as part  
of their program. See "Writing, Quantitative, and  
Breadth Requirements" on page 7 for information.

## Bachelor of Education Program

The BEd must be approved by the Faculty of  
Education. Major or minor requirements also must be  
approved by the department(s) in which these  
requirements are administered. To complete a BEd, a

student must make application, and be accepted to  
the professional development program. The BEd  
prepares students academically and professionally for  
a teaching career at either the elementary or  
secondary school level. Students considering the BEd  
degree should seek academic counselling for:

## Lower Divisions (first 60 units)

Contact Student Academic Resources, 3300 Maggie  
Benston Student Services Centre, 778.782.4356.

## Upper Divisions (BEd degree, education minors, certificate in literacy instruction, post baccalaureate diplomas)

Contact the Undergraduate Advising Office,  
8560 Education Building, 778.782.3436

## Transfer Credit

Students may be admitted to the BEd program with  
advance standing. Credit may be granted for  
appropriate work at other institutions to a 60 unit  
maximum excluding professional education, or 90  
units including an acceptable year of professional  
education (EDUC 401, 402 and 405).

## General Program

### Requirements

Students complete a minimum of 150 units which  
includes **one** of the following.

- a major from the Faculties of Applied Sciences, Arts  
and Social Sciences, or Science, or
- two minors/extended minors, completed from the  
Faculties of Applied Sciences, Arts or Science or
- the Mathematical Sciences specialization completed  
from the Faculty of Education

and all of the following

- a minor from the Faculty of Education (may be fully  
or partially completed during EDUC 404)
- EDUC 401, 402, 405
- a minimum of 54 units in upper division courses  
(numbered 300 and 400), excluding EDUC 401,  
402, 405 and 406
- two of EDUC 220, 230, 240 or 250
- a minimum of 24 units of upper division education  
courses (excludes EDUC 401, 402, 405, 406 and all  
EDPR courses) which must include two Faculty of  
Education Designs for Learning courses (may  
include courses completed for EDUC 404 or for the  
education minor)
- certificate in liberal arts
- Students must achieve both a minimum cumulative  
grade point average (CGPA) of 2.0 and a minimum  
grade point average (GPA) of 2.0 calculated on the  
basis of all upper division courses completed at  
Simon Fraser University.

## Honors Program

### Requirements

Students complete 162 units minimum which include

- an honors from the Faculties of Applied Sciences,  
Arts and Social Sciences, or Science
- a minor from the Faculty of Education (may be fully  
or partially completed during EDUC 404)
- a minimum of 54 units in upper division courses  
(numbered 300 and 400), excluding EDUC 401,  
402, 405 and 406
- two of EDUC 220, 230, 240 or 250
- EDUC 401, 402 and 405
- a minimum of 24 units of upper division education  
(excludes EDUC 401, 402, 405 and 406) which  
must include two education designs for learning  
courses (may include courses completed for EDUC  
404 and the education minor)
- certificate in liberal arts

- Students must achieve a 3.0 minimum cumulative grade point average (CGPA) and a 3.0 minimum grade point average (GPA) calculated on all upper division courses completed at the University.

## Bachelor of Education as a Second Degree

To be admitted, students must possess a bachelor's degree and have been admitted to the Professional Development Program.

### Requirements

45 upper division units in education which includes

EDUC 401-8 Introduction to Classroom Teaching  
EDUC 402-7 Studies of Educational Theory and Practice

EDUC 405-15 Teaching Semester

A minor from the Faculty of Education

EDUC 404 (15 EDUC upper division units minimum)

Any additional course work needed to address academic requirements for a professional certificate and additional requirements to complete a minor must be completed over and above the required 45 units.

**Note:** It is the student's responsibility to ensure that they meet the BC College of Teachers requirements for a Professional Teaching Certificate.

### Education Courses in French

[www.sfu.ca/baff-offa/educfr](http://www.sfu.ca/baff-offa/educfr)

## Bachelor of General Studies (Education)

In this non-specialist program, students will learn through lectures, seminars, field experiences, service learning (learning while placed in an educational setting) and by distance education.

### Admission Requirements

Applicants will meet the minimum Simon Fraser University admission requirements. See "Admission and Readmission" on page 17.

### Program Requirements

Students complete 120 units including at least 45 upper division units. A 2.00 graduation grade point average (GPA) and upper division GPA is required.

With the exception of EDUC 401, 402, 405 and 406, courses completed in any faculty may be used to satisfy degree requirements, but course admission is subject to the prerequisites of various departments.

#### Writing, Quantitative and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7.

Students complete all of

EDUC 100-3 Selected Questions and Issues (Education)

EDUC 252-4 Introduction to Reflective Practice

EDUC 352-4 Building on Reflective Practice

Additional requirements are satisfied through completion of either the general education option, or the double minor option, or the specialization option as specified below.

#### General Education Option

In addition to the courses specified above, students who choose this option will complete nine lower division and 15 upper division units in EDUC courses.

#### Double Minor Option

In addition to the courses specified above, students complete two minors or extended minors, one of which must be from the Faculty of Education.

#### Specialization Option

Students who choose this option will satisfy the requirements by completing an approved specialization from the Faculty of Education. Students may choose to graduate without enrolling in the Professional Development Program (PDP).

### Transfer Credit

Students may transfer a maximum of 60 units into the BGS (Education) from accredited institutions.

Students may transfer an additional 30 units from an accredited degree-granting institution with Faculty of Education approval, providing 30 of the required 45 upper division units are Simon Fraser University courses. Also note that any minor program must include at least seven upper division units earned at Simon Fraser University. See "Undergraduate Degree Requirements" on page 7 for regulations.

### Professional Development Program

This one year teacher training program is an integral component of the bachelor of education requirements. Admission is by application.

Declaration of BEd as a degree goal does not guarantee acceptance into PDP. See "Professional Development Program (PDP)" on page 167.

### Specializations

#### Early Learning Specialization

This bachelor of general studies (education) program is for students who are considering an early elementary (kindergarten to grade three) teaching career. Note that admission to this program does not guarantee admission to the Professional Development Program (PDP). Students who receive credit for this specialization cannot also receive credit for the minor in early childhood education.

#### Admission Requirements

To be admitted, applicants must have credit for 30 units from an approved early childhood education diploma program with a minimum 3.0 grade point average, or have completed all of  
EDUC 464-4 Early Childhood Education  
EDUC 466-4 Early Childhood Education: Curriculum and Development  
PSYC 250-3 Introduction to Developmental Psychology

#### Lower Division Requirements

Students complete all of  
EDUC 100-3 Selected Questions and Issues in Education  
EDUC 252-4 Introduction to Reflective Practice  
MATH 190-4 Principles of Mathematics for Teachers  
plus six additional EDUC units

#### Upper Division Requirements

Students complete a total of 45 upper division units including  
EDUC 352-4 Building on Reflective Practice  
plus seven units chosen from  
EDUC 322-3 The Social Lives of School Children  
EDUC 332-3 Naturalistic Observations in Early Learning Settings  
EDUC 465-4 Children's Literature  
EDUC 472-4 Designs for Learning: Elementary Language Arts  
EDUC 475-4 Designs for Learning: Elementary Mathematics

plus 20 upper division units in the area of BC elementary school curriculum including at least three units from two of the following areas: biology, Canadian studies, chemistry, computing science, earth sciences, English, environmental science, explorations, fine and performing arts, First Nations, French, geography, history, humanities, kinesiology, mathematics, and physics.

Students may have to complete additional upper division course work to total the required 45 upper division units.

#### Other Requirements

Students also complete

- six units of English, which may include a maximum of three units of English composition\*

- and three units in each of Canadian history, Canadian geography and laboratory science\*

\*see [www.educ.sfu.ca/pdp/admissions/requirements.html](http://www.educ.sfu.ca/pdp/admissions/requirements.html) for a list of acceptable courses

#### Recommended Courses

It is recommended that students complete three units of FPA courses and three units of KIN courses.

### Mathematical Sciences Specialization

For a bachelor of education degree, or a bachelor of general studies (education) degree, with a mathematical sciences specialization, students complete 150 units, comprised of a minimum of 30 lower division and 30 upper division units, including the following, as well as all the bachelor of education requirements.

#### Lower Division Requirements Group 1

Students complete

MACM 101-3 Discrete Mathematics I

and one of

MATH 150-4 Calculus I with Review

MATH 151-3 Calculus I for the Biological Sciences

MATH 154-3 Calculus I for the Biological Sciences

MATH 157-3 Calculus for the Social Sciences I

and one of

MATH 152-3 Calculus II

MATH 155-3 Calculus II for the Biological Sciences

MATH 158-3 Calculus for the Social Sciences II

#### Lower Division Requirements Group 2

Students complete at least four of

CMPT 120-3 Introduction to Computing Science and Programming I (or 126)

MACM 201-3 Discrete Mathematics II

MACM 202-4 Mathematical Modeling and Computation

MATH 113-3 Euclidean Geometry\*

MATH 240-3 Algebra I: Linear Algebra\* (or 232)

MATH 242-3 Introduction to Analysis

STAT 270-3 Introduction to Probability and Statistics

#### Lower Division Requirements Group 3

Students complete at least three of

EDUC 211-3 Mathematical Experience I: Numbers and Beyond

EDUC 212-3 Mathematical Experience II: Shape and Space

MATH 121-3 Mathematical Expeditions

MATH 160W-3 Mathematics in Action

MATH 178W-3 Fractals and Chaos

MATH 197-3 Hitchhikers Guide to Everyday Math

STAT 101-3 Introduction to Statistics

#### Upper Division Requirements

Students complete a total of 30 units chosen from the following

CMPT 320-3 Social Implications – Computerized Society

MACM 316-3 Numerical Analysis I

MATH 308-3 Linear Programming

MATH 309-3 Continuous Optimization

MATH 310-3 Introduction to Ordinary Differential Equations

MATH 338-3 Advanced Linear Algebra

MATH 340-3 Algebra II: Rings and Fields

MATH 341-3 Algebra III: Groups

MATH 342-3 Elementary Number Theory\*

MATH 343-3 Applied Discrete Mathematics

MATH 345-3 Introduction to Graph Theory

MATH 380-3 History of Mathematics\*

MATH 408-3 Discrete Optimization

MATH 419-3 Linear Analysis

MATH 440-3 Galois Theory

MATH 443-3 Combinatorial Theory

MATH 445-4 Graph Theory

MATH 447-3 Coding Theory

\*recommended

## Counselling and Human Development Minor Program

This minor teaches a combination of theoretical, empirical, and practical matters central to the understanding and practice of counselling and human development. The course work provides students with a strong theoretical and critical foundation on which to base and evaluate counselling and teaching practices aimed at enhancing human development.

### Lower Division Requirements

EDUC 220-3 Introduction to Educational Psychology  
EDUC 222-3 Research Methods in Educational Psychology  
PSYC 250-3 Introduction to Developmental Psychology

### Upper Division Requirements

(15 units minimum)

Students complete both of  
EDUC 322-3 Social Lives of School Children  
EDUC 323-3 Introduction to Counselling Theories

Students must also complete three electives selected from the following. At least two of

EDUC 324-3 Foundations of Multicultural Counselling  
EDUC 327-3 Self, Psychology and Education  
EDUC 328-3 Theories of Career Development and Education  
EDUC 423-4 Helping Relationships  
EDUC 464-4 Early Childhood Education

If courses chosen from the list above do not add up to a minimum of 15 units, then one additional course chosen from the following is required:

EDUC 371-4 School Health Education  
EDUC 422-4 Learning Disabilities  
EDUC 428-4 Nature and Nurture of Gifted Students  
EDUC 437-4 Ethical Issues in Education  
EDUC 441-4 Multicultural/Anti-Racist Education  
EDUC 445-4 Legal Context of Teaching

## Curriculum and Instruction Minor Program

This minor is for those desiring theoretical and practical expertise in contemporary approaches to curriculum development and instructional design.

### Lower Division Requirements

Students complete two of  
EDUC 220-3 Introduction to Educational Psychology  
EDUC 230-3 Introduction to Philosophy of Education  
EDUC 240-3 Social Issues in Education  
EDUC 250-3 Studies in the History of Education in the Western World

### Upper Division Requirements

Students complete  
EDUC 471-4 Curriculum Development: Theory and Practice

plus 11 upper division EDUC units and/or EDPR courses to total 15 units.

## Early Learning Minor Program

This minor provides a focus for students wishing to work with children aged three through eight. Students who receive credit for this minor cannot also receive credit for the early learning specialization with the bachelor of general studies program.

### Lower Division Requirements

PSYC 250-3 Introduction to Developmental Psychology

### Upper Division Requirements

EDUC 464-4 Early Childhood Education  
EDUC 466-4 Early Childhood Education: Curriculum and Development

plus seven units chosen from the following  
EDUC 322-3 The Social Lives of School Children  
EDUC 332-3 Naturalistic Observations in Early Learning Settings

EDUC 422-4 Learning Disabilities  
EDUC 465-4 Children's Literature  
EDUC 472-4 Designs for Learning: Elementary Language Arts  
EDUC 473-4 Designs for Learning: Reading  
EDUC 475-4 Designs for Learning: Elementary Mathematics

Students will not receive credit for both the early learning minor and the early childhood minor.

## Education and Technology Minor Program

This minor provides a structure for undergraduate studies of education and technology.

### Lower Division Requirements

Students complete  
EDUC 260-3 Learning and Teaching Through Technology

and one of

EDUC 220-3 Introduction to Educational Psychology  
EDUC 230-3 Introduction to Philosophy of Education  
EDUC 240-3 Social Issues in Education

### Upper Division Requirements

Students complete all of  
EDUC 358-3 Foundations of Educational Technology  
EDUC 463-4 Multimedia for Curriculum Design  
EDUC 482-4 Designs for Learning: Information Technology

and one of

EDUC 320-3 Instructional Psychology  
EDUC 325-4 Assessment for Classroom Teaching  
EDUC 412-4 Designs for Learning: Second Language Arts  
EDUC 414-4 Designs for Learning: Secondary Social Studies  
EDUC 415-4 Designs for Learning: Secondary Mathematics  
EDUC 416-4 Designs for Learning: Secondary Science  
EDUC 426-4 Teaching Children and Youth with Special Needs  
EDUC 430-4 Designs for Learning: Dance  
EDUC 437-4 Ethical Issues in Education  
EDUC 471-4 Curriculum Development: Theory and Practice  
EDUC 472-4 Designs for Learning: Elementary Language Arts  
EDUC 473-4 Designs for Learning: Reading  
EDUC 474-4 Designs for Learning: Elementary Social Studies  
EDUC 475-4 Designs for Learning: Elementary Mathematics  
EDUC 476-4 Designs for Learning: Elementary Science  
EDUC 477-4 Designs for Learning: Art  
EDUC 478-4 Designs for Learning: Music  
EDUC 479-4 Designs for Learning: Physical Education  
EDUC 480-4 Designs for Learning: French as a Second Language  
EDUC 481-4 Designs for Learning: French Immersion Programs and Francophone Schools  
EDUC 482-4 Designs for Learning: Information Technology  
EDUC 483-8 Designs for Learning: Curriculum Studies  
EDUC 485-8 Designs for Learning: Writing

## Educational Psychology Minor Program

Educational psychology makes theoretical and experimental inquiries into how students learn from instruction, how they acquire and express motivation in educational settings, and how they develop skills in school subjects and for learning. This program also studies how this first line of inquiry contributes to designs for instructional experiences that promote a full spectrum of achievements.

The minor consists of required courses that develop a broad background in educational psychology supplemented by electives. For a teaching career, it provides a research based foundation in the psychology of teaching and learning underlying a professional studies program. For others, it articulates applied psychology serving one of our society's most important aims, education of people of all ages.

### Lower Division Requirements

EDUC 220-3 Introduction to Educational Psychology  
EDUC 222-3 Research Methods in Educational Psychology

### Upper Division Requirements

Students complete all of  
EDUC 320-3 Instructional Psychology  
EDUC 325-3 Assessment for Classroom Teaching  
EDUC 326-3 Classroom Management and Discipline plus two of  
EDUC 327-3 Self, Psychology and Education  
EDUC 422-4 Learning Disabilities  
EDUC 428-4 Nature and Nurture of Gifted Students  
EDUC 464-4 Early Childhood Education

## Environmental Education Minor Program

This minor develops teacher skills in environmental and outdoor education programs from kindergarten through grade 12, and in the organization and operation of residential and day centre outdoor education, wilderness outdoor recreation, and other interdisciplinary environmental school programs.

### Prerequisite Courses

Students complete nine units selected from the following.

BISC 102-4 General Biology  
BISC 204-3 Introduction to Ecology\*  
EDUC 240-3 Social Issues in Education  
GEOG 100-3 Human Geography  
GEOG 111-3 Earth Systems  
GEOG 215-3 Biogeography\*  
GEOG 241-3 Social Geography  
KIN 142-3 Introduction to Kinesiology  
PHIL 001-3 Critical Thinking  
PHIL 120-3 Introduction to Moral Philosophy  
PSYC 106-3 Psychological Issues in Contemporary Society  
SA 150-4 Introduction to Sociology  
SA 202-4 Post-Industrial Society

\*students with credit for GEOG 215 may not receive credit for BISC 204

### Required Courses

Students complete a minimum of 14 units including  
EDUC 452-8 Environmental Education

and two of

BISC 304-3 Animal Ecology  
BISC 306-3 Invertebrate Biology  
BISC 310-3 The Natural History of British Columbia  
BISC 317-3 Insect Biology  
BISC 337-3 Plant Biology  
BISC 404-3 Plant Ecology  
EDUC 414-4 Designs for Learning: Secondary Social Studies  
EDUC 416-4 Designs for Learning: Secondary Science  
EDUC 433-4 Philosophical Issues in Curriculum  
EDUC 471-4 Curriculum Development: Theory and Practice  
EDUC 474-4 Designs for Learning: Elementary Social Studies  
EDUC 476-4 Designs for Learning: Elementary Science  
EDUC 459-4 Instructional Activities in Physical Education  
EDUC 482-4 Designs for Learning: Information Technology  
GEOG 322-4 World Resources  
GEOG 369-4 Human Microgeography

## French Education Minor Program

This minor explores contemporary second language teaching and learning theory, as well as experientially based approaches to French language curriculum development and instructional design, so that culturally informed and appropriate practices can be developed and used in French-speaking classrooms.

### Lower Division Requirements

Students complete three EDUC lower division units as well as six FREN units at the 200 division (or can demonstrate an equivalent knowledge of the language).

### Upper Division Requirements

Students complete a minimum of 15 units as specified below, including one or both of

EDUC 378-3 Developing Skills for Teaching Core French\*

EDUC 380-4 Introduction to Teaching French in Canadian Contexts\*\*

and one of

EDUC 480-4 Designs for Learning: French as a Secondary Language

EDUC 481-4 Designs for Learning: French Immersion Programs and Schools

To bring the total to 15 required units as specified above, students must also complete two to three of the following courses, when taught in French.

EDUC 414-4 Designs for Learning: Secondary Social Studies

EDUC 415-4 Designs for Learning: Secondary Mathematics

EDUC 416-4 Designs for Learning: Secondary Science

EDUC 474-4 Designs for Learning: Elementary Social Studies

EDUC 475-4 Designs for Learning: Elementary Mathematics

EDUC 476-4 Designs for Learning: Elementary Science

\*required for students entering Université Laval's Explore Program

\*\*students pursuing second and subsequent degrees are not required to complete this course

### Explore Program at Université Laval

Simon Fraser University has an official agreement with Université Laval Language School (ELUL) in Québec City. Students in this program can complete specially designed methodology courses in the *Explore* program, and then use one of the following Laval courses towards Simon Fraser University's French Education Minor.

These courses are recognized by the British Columbia College of Teachers as part of the requirements for teacher certification.

DID 18200 Didactics of Oral French

DID 18201 Didactics of Written French

Either of these would replace EDUC 380 as part of the French Education Minor requirements here at Simon Fraser University.

Although not a requirement, students are strongly encouraged to apply for entry into this French as a second language program for the linguistic and cultural experience in a setting.

A bursary is available through the BC Ministry of Education's French Program branch.

## International and Global Education Minor Program

This minor explores an interdisciplinary, experientially based approach to international and global education so that appropriate learning experiences can be created and infused in any given elementary and secondary course.

## Lower Division Requirements

Students complete one of the following.

EDUC 100-3 Questions and Issues in Education

EDUC 230-3 Introduction to Philosophy of Education

EDUC 240-3 Social Issues in Education

EDUC 250-3 Studies in the History of Education in the Western World

## Upper Division Requirements

Students complete a minimum of 15 units as specified below plus an intercultural/international experience (see below).

EDUC 370-4 International and Intercultural Education

EDUC 435-4 Infusing Global Perspectives in Curriculum

and either

one Designs for Learning course and one of the following courses

or two of

EDUC 311-3 Foundations in Aboriginal Education, Language and Culture

EDUC 367-4 Teaching Children and Minority Language Backgrounds in Elementary Classrooms

EDUC 382-4 Diversity in Education: Theories, Policies, Practices

EDUC 441-4 Multicultural/Anti Racist Education

EDUC 448-4 Teaching about Justice, Law and Citizenship

EDUC 452-8 Environmental Education

EDUC 467-4 Curriculum and Instruction in Teaching English as a Second Language

EDUC 471-4 Curriculum Development: Theory and Practice

## Intercultural/International Experience

In addition to the requirements listed above, an academic intercultural and/or international experience is also required before students complete this minor. This post-secondary experience may be an intercultural experience within Canada, such as a practicum experience in a First Nations community, or outside of Canada. Examples include

- co-operative education placement in an intercultural/international setting
- participation in an international field school program
- international student exchange term outside of Canada or the United States
- teaching English as a foreign language outside of Canada or the United States

Experiences fulfilling the requirements of this minor will need to meet the following criteria.

- successful completion of the program experience as indicated by an official document from the supervising institution
- an experience with high participatory involvement
- an experience completed within five years prior to enrolling in the minor, or five years after completing the course work for the minor

Those who successfully complete the PDP ITEM program or international field school at Simon Fraser University will meet the above requirements.

All other applicants must submit a report indicating the nature of their experience, an analysis of their learning, and a letter of support from a person involved in supervising the experience. The director of undergraduate programs will oversee the submission assessment. A follow-up interview may be required.

## Learning and Developmental Disabilities Minor Program

This minor enhances understanding of learning and developmental disabilities, and explores an interdisciplinary approach to the health, education and care of infants, children and adults with disabilities.

## Lower Division Requirements

Students complete one of

EDUC 220-3 Introduction to Education Psychology

PSYC 250-3 Introduction to Developmental Psychology

## Recommended Lower Division Courses

It is strongly recommended that minor program students complete at least one of the following.

LING 220-3 Introduction to Linguistics

PSYC 221-3 Introduction to Cognitive Psychology

## Upper Division Requirements

Students complete a minimum of 15 units as specified below.

EDUC 422-4 Learning Disabilities

EDUC 424-4 Learning Disabilities: Laboratory

plus one of

EDUC 315-3 Individual and Developmental Differences in Language Acquisition

EDUC 473-4 Designs for Learning: Reading

plus one of

EDUC 426-4 Teaching Children and Youth with Special Needs

EDUC 427-4 Teaching Children with Special Needs in Inclusive Classrooms

EDUC 428-4 Nature and Nurture of Gifted Students

EDUC 475-4 Designs for Learning: Elementary Mathematics

PSYC 354-3 Development of Children's Thinking

PSYC 355-3 Adolescent Development

PSYC 356-3 Developmental Psychopathology

PSYC 491-3 Developmental Disabilities

## Physical Education Minor Program

This minor program provides students in the professional development program with competence to teach physical education.

### Prerequisite Courses

Prospective students should complete at least three of the following courses (or approved transfer courses from community colleges or other universities) prior to enrolling in EDUC 401. Students should choose those courses which are prerequisites to the upper division courses they will complete for the minor.

EDUC 220-3 Introduction to Education Psychology

EDUC 230-3 Introduction to Philosophy of Education

EDUC 240-3 Social Issues in Education

FPA 120-3 Introduction to Contemporary Dance

KIN 105-3 Fundamentals of Human Structure and Function

KIN 110-3 Human Nutrition: Current Issues

KIN 140-3 Contemporary Health Issues

KIN 142-3 Introduction to Kinesiology

KIN 143-3 Exercise Management

KIN 205-3 Introduction to Human Physiology

KIN 241-3 Sports Injuries — Prevention and Rehabilitation

All minor candidates must complete designated curriculum seminars and workshops during EDUC 402 and a specified teaching assignment in physical education during EDUC 405. Details of these requirements are available during EDUC 401. The minor in physical education may not be declared on a student's program until all prerequisites, including a practicum placement in EDUC 405, are met.

## Upper Division Requirements

Students complete a minimum of 14 units as specified below.

EDUC 459-4 Instructional Activities in Physical Education

EDUC 479-4 Designs for Learning: Physical Education

plus two of

EDUC 330-3 Movement Language Elements for Dance in Education

EDUC 457-4 Education and Drama  
KIN 342-3 Active Health

Students can include only one Designs for Learning course chosen from the following.

EDUC 412-4 Designs for Learning: Secondary Language Arts  
EDUC 414-4 Designs for Learning: Secondary Social Studies  
EDUC 415-4 Designs for Learning: Secondary Mathematics  
EDUC 416-4 Designs for Learning: Secondary Science  
EDUC 430-4 Designs for Learning Dance  
EDUC 472-4 Designs for Learning: Elementary Language Arts  
EDUC 473-4 Designs for Learning: Reading  
EDUC 474-4 Designs for Learning: Elementary Social Studies  
EDUC 475-4 Designs for Learning: Elementary Mathematics  
EDUC 476-4 Designs for Learning: Elementary Science  
EDUC 477-4 Designs for Learning: Art  
EDUC 478-4 Designs for Learning: Music  
EDUC 480-4 Designs for Learning: French as a Second Language  
EDUC 481-4 Designs for Learning: French Immersion and Programme-cadre de Français  
EDUC 482-4 Designs for Learning: Information Technology  
EDUC 485-8 Designs for Learning: Writing

### Secondary Mathematics Education Minor Program

This minor will interest pre-service teachers who are considering a career in teaching secondary mathematics.

#### Admission Requirements

Applicants must have sufficient course work to teach secondary mathematics (usually the equivalent of a minor in mathematics).

#### Upper Division Requirements

Students complete a minimum of 15 units as specified below.

EDUC 411-3 Investigations in Mathematics for Secondary Teachers  
EDUC 415-4 Designs for Learning: Secondary Mathematics

plus one of the following electives. This list is composed of topics that are directly related to mathematics such as technology, science, philosophy and music.

EDUC 358-3 Foundations of Educational Technology  
EDUC 416-4 Designs for Learning: Secondary Science  
EDUC 433-4 Philosophical Issues in Curriculum  
EDUC 463-4 Multimedia for Curriculum Design  
EDUC 469-4 Music Education as Thinking in Sound  
EDUC 482-4 Designs for Learning: Information Technology

Students complete an additional 300 or 400 division course(s) in education to complete the total of at least 15 units (excluding EDUC 475).

### Certificate in Literacy Instruction

Contact the Undergraduate Advising Office, 8631 Education Building, 778.782.3436.

This certificate prepares students to teach literacy skills to adult learners. By combining courses from different disciplines with opportunities for guided practice, it provides historical and contextual perspectives on literacy, acquaints students with current field practices and develops practical skills.

Completion of the certificate is normally within five years of admission to the program.

### Program Requirements

Students complete 29 units, of which 23 are in the following seven required courses.

EDUC 240-3 Social Issues in Education  
EDUC 341-3 Literacy, Education and Culture  
EDUC 342-3 Contemporary Approaches to Literacy Instruction  
EDUC 343-5 Literacy Practicum  
ENGL 210-3 Advanced University Writing

plus two of

ENGL 101-3 Introduction to Fiction  
ENGL 102-3 Introduction to Poetry  
ENGL 103-3 Introduction to Drama  
ENGL 104-3 Introduction to Prose Genres

In addition, students must complete at least an additional six units in Faculty of Education or Faculty of Arts and Social Sciences courses designated below. Students must select courses that will further their own specific interests in literacy instruction and should be aware that some courses require the completion of prerequisites outside the certificate program.

#### Faculty of Education

EDUC 325-3 Assessment for Classroom Teaching  
EDUC 422-4 Learning Disabilities  
EDUC 441-4 Multicultural/Anti-Racist Education  
EDUC 467-4 Curriculum and Instruction in Teaching English as a Second Language  
EDUC 471-4 Curriculum Development: Theory and Practice  
EDUC 472-4 Designs for Learning: Language Arts  
EDUC 473-4 Designs for Learning: Reading

#### Faculty of Arts and Social Sciences

ENGL 370-4 Studies in Language  
ENGL 371-4 Writing: Theory and Practice  
HUM 320-4 The Humanities and Philosophy  
HUM 321-4 The Humanities and Critical Thinking  
LING 260-3 Language, Culture and Society  
PHIL 001-3 Critical Thinking  
PSYC 206-3 Introduction to Psychological Assessment  
SA 304-4 Social Control  
SA 333-4 Schooling and Society

#### Notes

- Units applied to this certificate may not be applied to any other Simon Fraser University certificate or diploma, but they may be applied toward major or minor program requirements or toward a bachelor's degree under regulations governing those programs.
- At least 15 of the 29 required units must be completed at Simon Fraser University.
- Students must achieve a minimum 2.0 GPA, calculated on all Simon Fraser University courses applied to the program, with the exception that duplicate courses are counted only once.
- The certificate program cannot be used in place of the Faculty of Education's professional development program or equivalent as a route to a British Columbia teaching certificate.

### Post Baccalaureate Diploma (General)

Contact the Undergraduate Advising Office, 8631 Education Building, 778.782.3436.

This diploma offers students the opportunity to design and pursue a program of individualized study. Students wishing to use the post baccalaureate diploma to raise their teacher qualifications should speak with the Teacher Qualification Service or their school district regarding acceptable courses.

#### Program Requirements

Successful completion, within five years, of an approved program comprised of 30 units of upper division or graduate work plus any necessary prerequisites is required. A minimum of 15 of the 30 units must be earned in education and/or educational

professional courses and a maximum of 12 may be transfer units.

Courses completed within 10 years of starting the PBD may (with permission) be considered as part of the requirements for the diploma.

Students must maintain a 2.5 GPA on courses used for the diploma.

Courses completed during the EDUC 404 term may not be used toward a post baccalaureate diploma.

### Post Baccalaureate Diploma in Counselling and Human Development

This program offers individuals, who are employed or seeking employment in a human services or health care profession, a focused introduction to the core knowledge bases involved in counselling. Course work is designed to enhance the effectiveness of students in their current job or better prepare them for a future career in a helping profession.

#### Admission Requirements

In addition to the following requirements, students must also meet the Post Baccalaureate Diploma (General) program's requirements as listed in the "Program Requirements" on page 166. Applications will be reviewed by cognate faculty, the graduate faculty associate, or their designates. Typically, candidates will have the following prerequisites prior to admission to this program.

- a bachelor's degree with at least an introductory psychology course, a course in human development, plus one more upper division psychology or sociology course
- a minimum 50 hours of relevant voluntary or paid experience
- a written statement of career interest
- an admission grade point average of 2.5 or equivalent

#### Required Courses (17 units)

Students complete all of  
EDUC 323-3 Introduction to Counselling Theories  
EDUC 324-3 Foundations of Multicultural Counselling  
EDUC 328-3 Theories of Career Development and Education  
EDUC 423-4 Helping Relationships  
EDUC 437-4 Ethical Issues in Education  
**Elective Courses (13 units)**  
Students complete a minimum of 13 units chosen from the following.

EDUC 326-3 Classroom Management and Discipline  
EDUC 327-3 Self, Psychology and Education  
EDUC 322-3 The Social Lives of School Children  
EDUC 370-4 International and Intercultural Education  
EDUC 464-4 Early Childhood Education  
GERO 302-3 Health Promotion and Aging

### Post Baccalaureate Diploma in Early Childhood Education

This program provides a focus for students wishing to work with children aged three through eight. In addition to the following requirements, students must also meet the requirements stated above, in the *Program Requirements* section of the *Post Baccalaureate Diploma* (page 166).

#### Program Requirements

EDUC 322-3 The Social Lives of School Children  
EDUC 464-4 Early Childhood Education  
EDUC 465-4 Children's Literature

plus a minimum of three courses chosen from the following

EDUC 311-3 Foundations in Aboriginal Education, Language and Culture  
EDUC 315-3 Individual and Development Differences in Language Acquisition  
EDUC 326-3 Classroom Management and Discipline

EDUC 330-3 Movement Language Elements for Dance in Education  
 EDUC 341-3 Literacy, Education and Culture  
 EDUC 367-4 Teaching Children from Minority Language Backgrounds in Elementary Classrooms  
 EDUC 457-4 Drama and Education  
 EDUC 459-4 Instructional Activities in Physical Education  
 EDUC 467-4 Curriculum and Instruction in Teaching English as a Second Language  
 EDUC 471-4 Curriculum Development: Theory and Practice  
 EDUC 473-4 Designs for Learning: Reading  
 EDUC 475-4 Designs for Learning: Elementary Mathematics  
 EDUC 477-4 Designs for Learning: Art  
 EDUC 478-4 Designs for Learning: Music  
 plus additional upper division units in related topic areas to bring the total to 30 upper division units.

### Post Baccalaureate Diploma in Environmental Education

This program will interest practicing teachers who want to assist students to develop a greater awareness and understanding of the broadly defined environment. The program encompasses aspects of environment education. Through selected course work, environmental issues are explored using a multidisciplinary approach and historical and contemporary issues in human-environment interaction as related to diverse curricula.

In addition to the following requirements, students must also meet the requirements stated above, in the *Program Requirement* section of the "Post Baccalaureate Diploma (General)" on page 166.

Students complete 30 units as specified below including all of  
 EDUC 452-8 Environmental Education  
 EDUC 493-4 Directed Studies in Environmental Education

plus one of  
 EDUC 414-4 Designs for Learning: Secondary Social Studies  
 EDUC 416-4 Designs for Learning: Secondary Science  
 EDUC 474-4 Designs for Learning: Elementary Social Studies  
 EDUC 476-4 Designs for Learning: Elementary Science

plus two of  
 EDUC 311-3 Foundations in Aboriginal Education, Language and Culture  
 EDUC 433-4 Philosophical Issues in Curriculum  
 EDUC 437-4 Ethical Issues in Education  
 EDUC 441-4 Multicultural and Anti-Racist Education  
 EDUC 471-4 Curriculum Development: Theory and Practice

plus a minimum of six upper division units from the following.

For applicants with an academic background in the humanities/social sciences:

BISC 304-3 Animal Ecology  
 BISC 310-1 Natural History of BC  
 BISC 425-3 Biology and Society  
 EASC 303-3 Environmental Geoscience  
 EVSC 401-1 Current Topics in Environmental Science  
 GEOG 449-4 Environmental Processes and Urban Development  
 REM 311-3 Applied Ecology and Sustainable Environments  
 REM 412-3 Environmental Modeling  
 REM 445-3 Environmental Risk Assessment and Management

For applicants with an academic background in the sciences/applied sciences:

ECON 460-3 Seminar in Environmental Economics  
 GEOG 315-4 World Ecosystems  
 GEOG 316-4 Ecosystem Biogeochemistry  
 GEOG 385-3 Agriculture and the Environment  
 GEOG 389W-4 Human Ecology, Human Relations to Nature  
 GEOG 449-4 Environmental Processes and Urban Development  
 HIST 432-3 Problems in Environmental History  
 SA 326-4 Ecology and Social Thought  
 SA 371-4 Environment and Society

Additional courses consistent with the aims of the post baccalaureate diploma (PBD) may be substituted for courses in the above list with permission from the Undergraduate Programs office. Students are responsible for prerequisites and other permissions needed to gain entry to courses listed above. Departments sometimes give course enrolment priority to their own students. Because this will reduce access to others, PBD students should consult with faculty and departmental advisors when planning their program.

### Post Baccalaureate Diploma In French and Education

See "Post Baccalaureate Diploma in French and Education" on page 114.

### Post Baccalaureate Diploma in Special Education

This program offers educators and health care professionals who work with children and adults with disabilities the opportunity to consolidate work in lifespan development and special education in a way that facilitates a common discussion ground. The course work emphasizes knowledge and skills about lifespan development, individual differences, and assessment and support. Emphasis is placed on understanding how challenges presented to families of children with disabilities change over time as children mature and as they make transitions across home, school and community contexts.

#### Required Courses (22 units)

EDUC 315-3 Individual and Developmental Differences in Children's Language Acquisition  
 EDUC 422-4 Learning Disabilities  
 EDUC 426-4 Teaching Children and Youth with Special Needs  
 EDUC 464-4 Early Childhood Education

plus one of  
 EDUC 322-3 Social Lives of School Children  
 GERO 302-3 Health Promotion and Aging  
 PSYC 361-3 Social Cognition

plus one of  
 EDUC 424-4 Learning Disabilities Laboratory  
 EDUC 427-4 Seminar in Teaching Children with High-Incidence

#### Optional Courses (8 units)

EDUC 323-3 Introduction to Counselling Theories  
 EDUC 351-3 Teaching the Older Adult  
 EDUC 382-4 Diversity in Education: Theories, Policies, Practices  
 EDUC 423-4 Helping Relationships  
 EDUC 428-4 Nature and Nurture of Gifted Students  
 EDUC 433-4 Philosophical Issues in Education  
 EDUC 468-4 Cognition and Language in ESL Instruction  
 GERO 300-3 Introduction to Gerontology  
 GERO 401-3 Aging and the Built Environment  
 PSYC 354-3 Development of Children's Thinking  
 PSYC 355-3 Adolescent Development  
 PSYC 356-3 Developmental Psychopathology

### Post Baccalaureate Diploma In Teaching English As a Second Language

See "Post Baccalaureate Diploma in Teaching English as a Second Language" on page 125.

### Co-operative Education

This program is for qualified students who wish to combine work experience with academic studies.

Please note that this program is not part of the Professional Development Program and will not provide the training required for a teaching certificate from the BC College of Teachers.

For admission to co-operative education, students must have completed 30 units with a CGPA of 3.0 and have completed

EDUC 100-3 Selected Questions and Issues in Education

and two of  
 EDUC 220-3 Introduction to Educational Psychology  
 EDUC 230-3 Introduction to Philosophy of Education  
 EDUC 240-3 Social Issues in Education  
 EDUC 260-3 Learning and Teaching Through Technology

Transfer students must complete at least 15 units at Simon Fraser University before applying. Arrangements for work terms are made through the co-op co-ordinator, who should be consulted at least one term in advance. For details, see "Co-operative Education" on page 212.

### Field Programs

8559 Education Building, 778.782.5830 Tel,  
 778.782.5882 Fax, [www.educ.sfu.ca/fp](http://www.educ.sfu.ca/fp),  
[edprgps@sfu.ca](mailto:edprgps@sfu.ca)

#### Director

L. Kanevsky BA (S Fraser), MASpEd (San Diego),  
 MPhil, PhD (Col)

Field Programs enhances teacher continuing education through collaboration with other British Columbia educational agencies. All courses and programs are located at sites other than the Burnaby Mountain campus or Simon Fraser University Surrey or Simon Fraser University Vancouver. Courses offered through Field Programs (designated EDPR) are shown on page 370. Field Programs also offers a graduate diploma in advanced professional studies in education. Field Programs works with associations to co-develop ongoing professional in-service opportunities for teachers, including annual conferences and theme-specific non-credit in-service series.

### Professional Programs

8531 Education Building, 778.782.4326 Tel,  
 778.782.5691 Fax, [www.educ.sfu.ca/pdp/admissions](http://www.educ.sfu.ca/pdp/admissions)

#### Director

S.J. Smith BEd (Kelvin Grove CAE), BHMS, MED  
 (Qld), PhD (Alta)

#### Admissions Advisor

Ms. D. Kelso BA (S Fraser), 8624 Education Building,  
 778.782.3620/3149

### Professional Development Program (PDP)

Applicants must be attending Simon Fraser University or be admissible. See "Admission and Readmission" on page 17.

- All candidates are required to complete the on-line Professional Development Program application form.
- Candidates who have not attended Simon Fraser University previously, or who have not attended in

any of the three terms prior to intended enrolment, must apply for admission or readmission. See "Admission and Readmission" on page 17.

- All applications must be submitted to the PDP admissions office by January 15 for the fall term and May 15 for the spring term.
- All applicants pay the PDP application fee on-line or directly to the PDP admissions office, Faculty of Education.

The Professional Development program is also available in French, for students aspiring to teach in Core French, French Immersion or Programme Francophone. See "Bureau des affaires francophones et francophiles (BAFF) /Office of Francophone & Francophile Affairs (OFFA)" on page 453

### Elementary Applicants

Elementary applicants must, by the date of application, have completed a minimum of 76 units of courses acceptable for credit at Simon Fraser University (should include 16 units of upper division) including the following prerequisite courses.

- six units in English (a maximum of three units of English composition may be included)
- one course (three units) in each of Canadian history, Canadian geography, and laboratory science
- MATH 190
- elementary applicants should have education, fine and performing arts and kinesiology courses

### Secondary Applicants

Applicants who plan to teach at the secondary level must fulfil the requirements of a teachable major subject or two teachable minor subjects prior to commencing PDP.

#### Teachable Majors or Minors

biology  
Canadian studies (minor only)\*  
chemistry  
computing science (minor only)  
dance (FPA) (minor only)  
earth sciences  
English  
English and French literatures (joint major)  
First Nations (minor only)\*  
French  
French, history and politics (joint major)\*  
geography\*  
history\*  
humanities (minor only)\*  
kinesiology  
mathematics  
music (FPA)  
physics  
social studies\*  
theatre (FPA) (minor only)  
visual art (FPA)  
world literature

\*see requirements sheet in the Faculty of Education

Students planning to teach at the secondary level must complete requirements prior to commencing PDP, except BEd candidates who cannot complete their degree until they have successfully completed PDP. These BEd candidates complete one teachable major or two teachable minors prior to commencing PDP. Students from other institutions may apply prior to degree completion, but must have completed the degree one full term prior to commencing PDP.

Secondary applicants must complete six English units (a maximum of three units of English composition may be included) one full term prior to starting PDP.

Secondary applicants are encouraged to have education courses.

### All Applicants

- A minimum of two reference letters, and no more than three (one should describe the candidate's

experience in teaching/instructional related functions) must be submitted.

- A written assignment (described further on the PDP website) is required.
- A resumé must also be submitted by all applicants (see PDP website for information).
- Before program admission, applicants must demonstrate competence in written and oral English (and written and oral French for French immersion and French as a second language programs).
- Students may be asked to submit evidence of good health before being considered for admission.
- Students may be required to have an interview before being considered for program admission.
- If the number of PDP applicants exceeds facilities and staffing capabilities, the admissions committee will select the best qualified candidates.
- Admission selection is generally given to students whose applications show experience with and commitment to community service that may include teaching or other helping roles.
- Because the number of well qualified PDP applicants, it is most improbable that candidates who have been unsuccessful in four previous competitions will be considered favorably in any subsequent competition. Those who have been unsuccessful in gaining entry on at least four occasions are discouraged from further application.

### Program Description

The program's duration is three terms. Professional studies and activities are arranged in this sequence.

#### First Term of Professional Development Program

EDUC 401-8 Introduction to Classroom Teaching\*  
EDUC 402-7 Studies of Educational Theory and Practice\*

\*not offered in summer term

EDUC 401 and 402 are offered as an integrated program, combining theory and practice in both on campus seminars and in-school practice in the first term of PDP. This is accomplished by alternating blocks of classroom teaching with workshops and instruction on campus.

During EDUC 401, students are assigned to a teacher (school associate) identified by school authorities and supervised by a faculty associate appointed by the University. Students observe, teach and participate in school routines and programs.

During EDUC 402, students participate in the study of teaching, learning to make meaning of the complex world of educational practice, informed by extensive study of pedagogical literature.

#### French Education

French immersion, programme cadre and basic French for kindergarten to grade 12 are normally available. The majority of the program in immersion and programme cadre is in French.

#### Special Focus Modules

Special focus modules are offered during fall and spring terms. Entry may be competitive.

### EDUC 405-15 Teaching Semester

(Not offered in summer term) *Prerequisites: EDUC 401 and 402.*

A term of classroom experience supervised by University appointed faculty associates. The school placement is appropriate to the educational level and subject specialties in which the student expects to obtain certification. Students assume a large measure of responsibility and participate in a wide range of teaching and supervisory activities.

School placements in EDUC 405-15 are made in school districts throughout the Lower Mainland.

Grading in EDUC 401, 402 and 405 is on a pass/withdrawal basis.

### EDUC 404-0 Course Work Semester

*Prerequisites: EDUC 401 and 402.*

Course programming in this term is in consultation with undergraduate programs, faculty members, and the student's faculty associate to ensure that professional, academic and certification requirements are satisfied or to satisfy the educational requirements of designated PDP modules. Students undertake 15 units of studies in education (18 units if no previous recognized education course has been completed).

**Note:** Students completing degrees from the Faculties of Applied Sciences, Arts, Business Administration or Science may apply credit for EDUC 404 towards that degree.

To be recommended for certification, the student must achieve in EDUC 404 a GPA at least equivalent to that required for a degree in the University.

#### General Regulations

Students complete normal Simon Fraser University enrolment procedures before commencing studies in any term of the professional development program.

Successful applicants will be required to undergo a criminal record check. If the check indicates the applicant has a criminal record, that may preclude continuation in PDP.

Students must meet program goals, as outlined in the *Professional Development Handbook*.

- This program is normally completed in three consecutive terms. However, those with valid reasons may be given permission by the professional programs director to interrupt their program participation. A formal request must be submitted in writing to the director.
- A program interruption requested by a student may normally last no longer than two years.
- Students who indicate their intention to undertake a given term of the professional development program and who do not honor this commitment are considered to have withdrawn from the program. Permission to re-enter is not given automatically.

#### Readmission

Students who withdraw from EDUC 401/402 must re-apply to the admissions committee.

Students may apply for EDUC 405 re-entry by completing a re-entry application and submitting it and supporting documents to the professional programs director. Deadlines for re-application: April 15 for fall term; October 15 for spring term.

Permission to re-enter the program will be granted if

- the student has satisfactorily met the conditions for re-entry established when he/she interrupted or withdrew from the program
- space is available in the term for which the student applies

**Note:** After being withdrawn from EDUC 405 for a second time, a student may not re-enter the program unless by appeal.

Students who re-enter PDP should apply for re-entry within two years of withdrawal. Students who do not re-enter within the specified time may be required to complete additional course work before readmission.

Students who wish to re-enter EDUC 404 must apply to re-enter the program not later than six weeks prior to the beginning of the term. An application for re-entry to PDP must be completed.

#### Recommendation for Certification

The academic and professional records of all students who have completed the three professional development program terms will be subject to review by the faculty before a recommendation for certification is forwarded to BCCT.



## Special Professional Program Opportunities

### EDUC 405-15 Course Challenge

Students with a minimum of one year of full-time teaching experience in Canada or in a school setting where English or French was the normal language of instruction, and where the curriculum was reasonably similar to a Canadian public school curriculum, may challenge EDUC 405 subject to the following.

- Course challenge applicants will be considered according to generally established requirements and procedures. See "Course Challenge" on page 28.
- Normally, students can enrol in course challenge for EDUC 405 only while enrolled in EDUC 401/402. Additional full fees will be levied for challenging EDUC 405 regardless of whether the challenge is successful.
- Course challenge credit for EDUC 405 will not be granted before successful completion of EDUC 401/402.
- Applications, available from the professional programs director, must be submitted by: May 15 for the fall term; September 15 for the spring term.

## External Professional Development Programs

### External Programs Admissions Advisor

Ms. F. Verret, Simon Fraser University Surrey, (seducadv@sfu.ca), Tel 778.782.8128

There is an external professional development program that operates under the auspices of a consortia of local community colleges, northern school districts and Simon Fraser University. The consortia invite applicants with strong local northern connections. (Deadlines and admission procedures are different from the Lower Mainland application.)

AHCOTE – Alaska Highway Consortium on Teacher Education (Fort St. John, Dawson Creek) (subject to funding) Telephone 1.250.785.6981 local 2050 for information.

## Professional Qualification Program (PQP)

This is a three term (36 unit) program leading to a certificate in professional practices for those who wish to recertify their teaching credentials.

### Admission

PQP applicants must be admissible to Simon Fraser University. Those who have never attended here, or who have not attended in any of the previous three terms prior to their intended enrolment, must apply for university admission (<http://students.sfu.ca>). See "Admission and Readmission" on page 17.

PQP applicants must also provide the Professional Programs admissions office with a BC College of Teachers letter showing recommendation for enrolment in PQP or a similar program.

Send applications to: Faculty of Education, Simon Fraser University Surrey, Special Programs Advisor 250-13450 102nd Avenue, Surrey BC, V3T 0A3. These are due by March 31. An interview is required.

### Requirements

#### First Term

EDUC 352-4 Building on Reflective Practice  
EDUC 483-8 Designs for Learning: Curriculum Studies

#### Second Term

EDUC 401-8 Introduction to Classroom Teaching plus one additional upper division EDUC course (at least four units) selected by the student and approved by the director of PDP or designate

#### Third Term

EDUC 406-12 Supervised Observation and Teaching

Upon successful completion of the first two terms, students will then have satisfied the BC College of Teachers (BCCT) familiarization and methodology requirement for the certification of foreign trained teachers. Upon approval of the director of professional programs, PQP students may then enter EDUC 406, and upon satisfactory completion of that course, will meet the BCCT's practicum requirement for the certification of foreign trained teachers.

PQP students who complete all 36 units will also have met the requirements for the certificate in professional practices (see below).

In exceptional circumstances, the faculty associate and the PQP co-ordinator may recommend to the program director that the student complete EDUC 406 after completion of the first 12 units of PQP. In this case, the student does not need to complete the second term of course work. It is recommended that students complete at least eight units in Designs for Learning courses (EDUC 412, 414-416, 430, 472-483, 485) to enhance classroom skills.

## Certificate in Professional Practices

### External Programs Admissions Advisor

Ms. F. Verret, Simon Fraser University Surrey, (seducadv@sfu.ca), Tel 778.782.8128

This certificate trains either foreign trained teachers or previously credentialed Canadian teachers by upgrading skills to current practices. By completion of appropriate education courses and opportunities for guided practice, the student will: learn contextual perspectives on teaching in BC; become acquainted with contemporary school practices; and develop practical skills to British Columbia College of Teachers standards.

### Program Requirements

To qualify for the credential, students complete, within five years, either the Professional Qualification Program requirements for foreign trained teachers or complete the HEART (see below) requirements of the EDUC 406 practicum, and complete an additional three upper division EDUC courses (12 units).

Students must be admitted to the Professional Qualification Program or HEART teacher education module to qualify for the certificate.

Students must achieve a minimum 2.0 GPA, calculated on all Simon Fraser University courses applied to the program, with the exception that duplicate courses are counted only once.

## HEART (Helping Expand Access for Returning Teachers)

### EDUC 406-12 (HEART) Supervised Observation and Teaching

This EDUC 406 option within professional programs is a supervised orientation/observation and teaching sequence of about 12 weeks in a BC public school. This practicum offers educators, who do not meet BC certification requirements, an opportunity to familiarize themselves with the BC school system and to update teaching skills to acquire certification.

EDUC 406 is normally offered in the fall and spring terms only and space is limited.

Grading is on a pass/withdraw basis.

Applicants to HEART must be attending Simon Fraser University or be admissible to the University. See "Admission and Readmission" on page 17.

Candidates who have not attended Simon Fraser University previously, or who have not attended in any of three terms prior to intended enrolment in EDUC 406, must submit the application for undergraduate admission form to Student Services. Students intending to complete Simon Fraser University courses in preparation for application to EDUC 406 should contact Ms. F. Verret, 778.782.8128.

HEART applications should be received by: April 15 for fall term; September 15 for spring term. An interview is normally required. Applications should be sent to Faculty of Education, Simon Fraser University Surrey, 250-13450 102nd Avenue, Surrey BC, K3T 0A3, attention Special Programs Advisor.

## Certification

Simon Fraser University does not confer teaching certificates. The BC College of Teachers (BCCT) is the only body in BC authorized to grant such certificates. Under July 1, 1974 regulations, qualified students from provincial universities, upon making application and submitting birth or baptismal certificate as proof of name and age, will receive a teaching credential.

**Note:** Persons convicted of a criminal offence and considering a teaching career should write to the BCCT for clarification of their status before undertaking a teacher education program.

### Types of Certificates

There are two types of teaching certificates. The conditional certificate is awarded after successful completion of an acceptable four year program. Included in the acceptable four year program are both academic and professional studies. The professional certificate is awarded after successful completion of an acceptable five year program of professional and academic studies culminating in a degree.

The conditional certificate requires a minimum of 76 units (five terms) in applied sciences, arts, business administration, science, or education, plus the professional development program (three terms). The conditional certificate (a minimum of 120 units of academic and professional credit) will normally qualify for Teacher Qualification Service category four.

### Notes Regarding Requirements for Teaching Certificates

The following are required for teacher certification.

- a minimum of six Department of English units (a maximum of three units of English composition may be included)

### Applying for a Certificate

The Faculty of Education sends the BCCT a list of students who have completed teacher certification requirements. Each student is given or mailed an application for teacher's certificate of qualification form. Students must forward the completed form to BCCT for formal evaluation for certification. Applications for certificate upgrading (e.g., when a teacher wishes to convert a conditional certificate to a professional certificate) must also be made to BCCT.

**Note:** There is a delay between the completion of the professional development program and the forwarding to the BCCT of documented recommendation for a teaching certificate.

Applicants for certification upon degree completion should note the University regulations in this Calendar concerning final deadlines for submission of graduation applications. Exceptions cannot be made.

## Teacher Qualification Service

This service is sponsored jointly by the BC Teachers' Federation and the BC School Trustee's Association and is an advisory service to teachers and school boards in evaluating the academic and professional preparation of teachers. At present, the service assists teachers who are newly certified, new to a school district, or who are upgrading their certificates. Evaluation forms are available from the Teacher Qualification Service, 106-1525 West 8th Avenue, Vancouver, BC, V6T 1T5, or from the PDP admissions office, Faculty of Education, Simon Fraser University.

# Faculty of Environment

8900 Technology and Science Complex 2,  
778.782.8787 Tel, 778.782.8788 Fax,  
www.sfu.ca/fenv

## Dean

J.T. Pierce BA (Tor), MA (Wat), PhD (Lond)

## Associate Dean

D. Knowler BA, MA (Alta), PhD (York, UK)

## Advisor

L. McGregor BComm (McM), 8905 Technology and  
Science Complex 2, 778.782.8810, fenvinfo@sfu.ca

## Undergraduate Degrees Offered

bachelor of arts (honors)  
bachelor of arts  
bachelor of science (honors)  
bachelor of science

## Diplomas and Certificates Offered

certificate in spatial information systems  
certificate in urban studies  
post baccalaureate diploma in sustainable community  
development

The Faculty of Environment offers programs in  
development studies, environmental science,  
geography, resource and environmental  
management, and sustainable community  
development.

## Student Responsibility

It is the responsibility of each student to be aware of  
faculty regulations as stated in this Calendar.  
Departmental and faculty advisors and staff are  
available for advice and guidance. However, the  
ultimate responsibility for completeness and  
correctness of course selection, for compliance with  
and completion of program and degree requirements,  
and for observance of regulations and deadlines rests  
with the student.

## Graduation Requirements

For a major, students must achieve both a minimum  
2.00 cumulative grade point average (CGPA) and a  
minimum 2.00 grade point average (GPA) calculated  
on all upper division courses. This GPA is calculated  
by dividing the total grade points earned in upper  
division by the total term units assigned for those  
courses, counting only the higher grade in courses  
that have been duplicated.

Normally 45 units of upper division courses are  
required of the 120 units required to graduate.  
Individual degrees may have supplementary  
graduation requirements. Therefore, students should  
check with the advisor about a possible higher  
minimum GPA or other additional requirements for  
graduation. For general undergraduate degree,  
diploma and certificate requirements, see page 6.

## Environmental Science Program

8109a South Science Building, 778.782.5621 Tel,  
778.782.3496 Fax, www.sfu.ca/biology/faculty/  
bendell

## Program Director

L. I. Bendell-Young BSc PhD (Tor)  
778.782.5621 Tel, 778.782.3496 Fax, bendell@sfu.ca

This program provides a broad education with  
specialization in one of six areas of emphasis:  
biology, chemistry, environmetrics, physical

geography, pollutant transport, and quantitative  
techniques for resource management. Extensive  
lower division requirements necessitate careful  
planning of course sequencing to ensure timely  
completion of the program. For advice about  
admission and general program requirements, see  
the director or faculty assistant.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfill  
writing, quantitative and breadth requirements as part  
of their program. See "Writing, Quantitative, and  
Breadth Requirements" on page 7 for information.

## Major Program

The minimum CGPA for continuation and graduation  
is 2.50. General University and Faculty of Science  
regulations also apply. The following requirements,  
organized by year, suggest a sequence for timely  
program completion.

## Biology

### Year One

BISC 101-4 General Biology  
BISC 102-4 General Biology  
CHEM 121-4 General Chemistry and Laboratory I  
CHEM 122-2 General Chemistry II  
CHEM 126-2 General Chemistry Laboratory II  
REM 100-3 Global Change

and one of

MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences  
MATH 157-3 Calculus for the Social Sciences I

and one of

MATH 152-3 Calculus II  
MATH 155-3 Calculus II for the Biological Sciences  
MATH 158-3 Calculus for the Social Sciences II

and one of

PHYS 101-3 Physics for the Life Sciences I  
PHYS 120-3 Mechanics and Modern Physics

### Year Two

BISC 204-3 Introduction to Ecology  
CHEM 215-4 Introduction to Analytical Chemistry  
CHEM 230-3 Inorganic Chemistry  
CHEM 281-4 Organic Chemistry I  
EVSC 200-3 Introduction to Environmental Science  
GEOG 111-3 Earth Systems  
MBB 231-3 Cellular Biology and Biochemistry

and one of

STAT 270-3 Introduction to Probability and Statistics  
STAT 201-3 Statistics for the Life Sciences

and one of

PHYS 102-3 Physics for the Life Sciences II  
PHYS 121-3 Optics, Electricity and Magnetism

### Year Three

BISC 304-3 Animal Ecology  
BISC 305-3 Animal Physiology  
BISC 312-3 Environmental Toxicology I  
ECON 103-4 Principles of Microeconomics  
ECON 105-4 Principles of Macroeconomics  
PHYS 346-3 Energy and the Environment  
STAT 302-3 Analysis of Experimental and  
Observational Data

### Year Four

BISC 202-3 Genetics  
BISC 404-3 Plant Ecology  
BISC 414-3 Limnology  
EVSC 401-1 Current Topics in Environmental Science

GEOG 316-4 Ecosystem Biogeochemistry  
STAT 403-3 Intermediate Sampling and Experimental  
Design

and any three courses from the following to be  
completed in years three or four (suggested course  
groupings need not be followed).

### Field Course

EVSC 491W-3 Advanced Field Studies in  
Environmental Science

### Plant Biology

BISC 310-3 The Natural History of British Columbia  
BISC 326-3 Biology of Algae and Fungi  
BISC 337-3 Plant Biology  
BISC 366-3 Plant Physiology

### Invertebrate Biology

BISC 306-3 Invertebrate Biology  
BISC 406-3 Marine Biology and Oceanography

### Vertebrate Biology

BISC 316-3 Vertebrate Biology  
BISC 407-3 Population Dynamics  
BISC 416-3 Fish Biology  
BISC 419-3 Wildlife Biology

### Resource and Environmental Management

REM 311-3 Applied Ecology and Sustainable  
Environments  
REM 356-3 Management Institutions  
REM 412-3 Environmental Modelling  
REM 445-3 Environmental Risk Assessment  
REM 471-3 Forest Ecosystem Management

**Note:** MBB 231 and 222 are complementary courses  
and together cover all aspects of cellular structure  
and function. It is strongly recommended that  
students complete MBB 222 as an elective.

## Electives

Additional electives are required to total 120 units,  
including at least 44 at the upper division.

## Chemistry

These Year One and Two requirements are the same  
as for the biology area of emphasis. Please refer to  
that section above.

### Year Three

CHEM 236-3 Inorganic Chemistry Laboratory  
CHEM 282-2 Organic Chemistry II  
CHEM 286-2 Organic Chemistry Laboratory II  
CHEM 360-3 Thermodynamics and Chemical  
Kinetics  
CHEM 316-4 Introductory Instrumental Analysis  
CHEM 371-3 Chemistry of the Aqueous Environment  
ECON 103-4 Principles of Microeconomics  
ECON 105-4 Principles of Macroeconomics  
STAT 302-3 Analysis of Experimental and  
Observational Data

### Year Four

BISC 312-3 Environmental Toxicology I  
CHEM 317-2 Analytical Environmental Chemistry  
CHEM 332-3 Chemistry of the Transition Metals  
CHEM 372-3 Chemistry of the Atmospheric  
Environment  
EVSC 401-1 Current Topics in Environmental Science  
PHYS 346-3 Energy and the Environment  
STAT 403-3 Intermediate Sampling and Experimental  
Design

and at least 18 units from the following courses to be  
completed in years three or four.

BISC 305-3 Animal Physiology  
BISC 414-3 Limnology  
CHEM 380-4 Chemical and Instrumental Methods of  
Identification of Organic Compounds

CHEM 460-3 Advanced Physical Chemistry  
 EVSC 491W-3 Advanced Field Studies in  
 Environmental Science  
 GEOG 316-4 Ecosystem Biogeochemistry  
 GEOG 317-4 Soil Science I  
 NUSC 341-3 Introduction to Radiochemistry  
 NUSC 342-3 Introduction to Nuclear Science  
 NUSC 346-2 Radiochemistry Laboratory  
 REM 311-3 Applied Ecology and Sustainable  
 Environments  
 REM 356-3 Management Institutions  
 REM 412-3 Environmental Modelling  
 REM 445-3 Environmental Risk Assessment

### Electives

Additional electives may be required to meet the 120 unit graduation requirement, including at least 44 at the upper division.

### Environmetrics

These Year One and Two requirements are the same as for the biology area of emphasis except that students must complete STAT 270, and not the alternative course, STAT 201. Please refer to that section for other requirements.

#### Year Three

CHEM 360-3 Chemical Kinetics and  
 Thermodynamics  
 CHEM 316-4 Introductory Instrumental Analysis  
 CHEM 371-3 Chemistry of the Aqueous Environment  
 ECON 103-4 Principles of Microeconomics  
 ECON 105-4 Principles of Macroeconomics  
 MATH 232-3 Elementary Linear Algebra  
 MATH 251-3 Calculus III  
 STAT 285-3 Intermediate Probability and Statistics  
 STAT 350-3 Linear Models in Applied Statistics

#### Year Four

CHEM 317-2 Analytical Environmental Chemistry  
 EVSC 401-1 Current Topics in Environmental Science  
 PHYS 346-3 Energy and the Environment  
 STAT 402-3 Generalized Linear and Nonlinear  
 Modelling  
 STAT 410-3 Statistical Analysis of Sample Surveys  
 STAT 430-3 Statistical Design and Analysis of  
 Experiments

and at least three courses from the following to be completed in years three or four.

BISC 304-3 Animal Ecology  
 BISC 312-3 Environmental Toxicology I  
 BISC 414-3 Limnology  
 CHEM 372-3 Chemistry of the Atmospheric  
 Environment  
 EVSC 491W-3 Advanced Field Studies in  
 Environmental Science  
 GEOG 214-3 Climatology I  
 GEOG 316-4 Ecosystem Biogeochemistry  
 GEOG 354-4 Introduction to Geographic Information  
 Systems  
 REM 311-3 Applied Ecology and Sustainable  
 Environments  
 REM 356-3 Management Institutions  
 REM 412-3 Environmental Modelling  
 REM 445-3 Environmental Risk Assessment and  
 Management of Hazardous Substances  
 REM 471-3 Forest Ecosystem Management

### Electives

Additional electives are required to meet the total 120 unit graduation requirement including at least 44 at the upper division.

### Suggested Groupings of Courses

The following course groupings for different focuses are suggested.

#### Biology Focus

BISC 304-3 Animal Ecology  
 BISC 312-3 Environmental Toxicology I  
 GEOG 316-4 Ecosystem Biogeochemistry

REM 311-3 Applied Ecology and Sustainable  
 Environments  
 REM 412-3 Environmental Modelling  
 REM 445-3 Environmental Risk Assessment and  
 Management of Hazardous Substances

#### Aqueous Chemistry Focus

BISC 414-3 Limnology  
 GEOG 311-4 Hydrology I  
 GEOG 316-4 Ecosystem Biogeochemistry  
 REM 311-3 Applied Ecology and Sustainable  
 Environments  
 REM 412-3 Environmental Modelling  
 REM 445-3 Environmental Risk Assessment

#### Atmospheric Focus

CHEM 372-3 Chemistry of the Atmospheric  
 Environment  
 GEOG 214-3 Climatology I  
 REM 311-3 Applied Ecology and Sustainable  
 Environments  
 REM 412-3 Environmental Modelling  
 Toxic Materials Focus  
 BISC 312-3 Environmental Toxicology I  
 REM 311-3 Applied Ecology and Sustainable  
 Environments  
 REM 356-3 Management Institutions  
 REM 412-3 Environmental Modelling  
 REM 445-3 Environmental Risk Assessment

### Physical Geography

#### Years One and Two

BISC 101-4 General Biology  
 BISC 102-4 General Biology  
 CHEM 121-4 General Chemistry and Laboratory I  
 CHEM 122-2 General Chemistry II  
 CHEM 126-2 General Chemistry Laboratory II  
 REM 100-3 Global Change  
 GEOG 111-3 Earth Systems  
 GEOG 213-3 Introduction to Geomorphology  
 GEOG 214-3 Climatology and the Environment  
 EVSC 200-3 Introduction to Environmental Science

and one of

MATH 151-3 Calculus I  
 MATH 154-3 Calculus I for Biological Sciences  
 MATH 157-3 Calculus I for Social Sciences

and one of

MATH 152-3 Calculus II  
 MATH 155-3 Calculus II for Biological Sciences  
 MATH 158-3 Calculus II for Social Sciences

and one of

PHYS 101-3 Physics for the Life Sciences I  
 PHYS 120-3 Mechanics and Modern Physics

and one of

PHYS 102-3 Physics for the Life Sciences II  
 PHYS 121-3 Optics, Electricity and Magnetism

and one of

BISC 204-3 Introduction to Ecology  
 GEOG 215-3 Biogeography

and one of

STAT 201-3 Statistics for the Life Sciences  
 STAT 270-3 Introduction to Probability and Statistics

and one of

GEOG 250-3 Cartography I  
 GEOG 253-3 Aerial Photographic Interpretation  
 GEOG 255-3 Geographical Information Science I  
 Eight units of electives Total 60 units

#### Years Three and Four

ECON 103-4 Principles of Microeconomics  
 ECON 105-4 Principles of Macroeconomics  
 EVSC 401-1 Current Topics in Environmental Science  
 GEOG 311-4 Hydrology  
 GEOG 316-4 Ecosystem Biogeochemistry  
 GEOG 317-4 Soil Science  
 PHYS 346-3 Energy and the Environment  
 STAT 302-3 Analysis of Experimental and  
 Observational Data

and one of

GEOG 352-4 Techniques in Spatial Analysis II  
 STAT 403-3 Intermediate Sampling and Experimental  
 Design

and two of

GEOG 313-4 River Geomorphology  
 GEOG 314-4 Weather and Climate  
 GEOG 315-4 World Ecosystems  
 GEOG 411-4 Advanced Hydrology  
 GEOG 412-4 Glacial Processes and Environments  
 GEOG 413-4 Advanced River Geomorphology  
 GEOG 414-4 Advanced Climatology  
 GEOG 415-4 Advanced Biogeography  
 GEOG 417-4 Advanced Soil Science

and three of

BISC 310-3 Plants and Animals of British Columbia  
 BISC 366-3 Plant Physiology\*  
 BISC 367-3 Plant Physiology Laboratory\*  
 BISC 404-3 Plant Ecology  
 BISC 414-3 Limnology  
 BISC 416-3 Fish Biology\*  
 BISC 434-3 Paleoecology and Palynology  
 CHEM 371-3 Chemistry of the Aqueous Environment\*  
 CHEM 372-3 Chemistry of the Atmospheric  
 Environment\*  
 EASC 303-3 Environmental Geoscience  
 EASC 304-3 Hydrogeology\*  
 EASC 403-3 Quaternary Geology  
 EASC 409-3 Rivers: Environments and Engineering\*  
 EASC 410-3 Groundwater Geochemistry and  
 Contaminant Transport\*  
 EVSC 491W-3 Advanced Field Studies in  
 Environmental Science  
 REM 311-3 Applied Ecology and Sustainable  
 Environments  
 REM 356-3 Management Institutions  
 REM 412-3 Environmental Modelling  
 REM 445-3 Environmental Risk Assessment  
 REM 471-3 Forest Ecosystem Management

and one of

GEOG 351-4 Cartography and Visualization  
 GEOG 353-4 Remote Sensing  
 GEOG 355-4 Geographical Information Science II

In addition to the above, students must complete 7-11 elective units to bring the total to the required 120 units. Also, of these units 44 must be upper division to satisfy the Faculty of Science requirements for a major.

\*requires prerequisites to be completed as electives

### Suggested Groupings of Courses

Three groupings of courses are identified below to aid students in their choice of electives.

#### Aquatic Environments

BISC 414-3 Limnology  
 BISC 416-3 Fish Biology  
 CHEM 371-3 Chemistry of the Aqueous Environment  
 EASC 409-3 Rivers: Environments and Engineering  
 GEOG 411-4 Advanced Hydrology  
 GEOG 413-4 Advanced River Geomorphology

#### Plants and Environment

BISC 310-3 Plants and Animals of British Columbia  
 BISC 366-3 Plant Physiology  
 BISC 367-3 Plant Physiology Laboratory  
 BISC 404-3 Plant Ecology  
 BISC 434-3 Paleoecology and Palynology  
 GEOG 314-4 Weather and Climate  
 GEOG 315-4 World Ecosystems  
 GEOG 415-4 Advanced Biogeography  
 GEOG 417-4 Advanced Soil Science  
 REM 471-4 Forest Ecosystem Management

#### Biogeochemistry

BISC 414-4 Limnology  
 CHEM 371-3 Chemistry of the Aqueous Environment  
 CHEM 372-3 Chemistry of the Atmospheric  
 Environment  
 EASC 304-3 Hydrogeology

EASC 410-3 Groundwater Geochemistry and Contaminant Transport  
GEOG 417-4 Advanced Soil Science

### Pollutant Transport

#### Year One

BISC 101-4 General Biology  
CHEM 121-4 General Chemistry and Laboratory I  
CHEM 122-2 General Chemistry II  
CHEM 126-2 General Chemistry Laboratory II  
EASC 101-3 Physical Geology  
EASC 102-3 Historical Geology  
REM 100-3 Global Change

and one of

MATH 151-3 Calculus I\*  
MATH 154-3 Calculus I for the Biological Sciences  
MATH 157-3 Calculus for the Social Sciences I

and one of

MATH 152-3 Calculus II\*  
MATH 155-3 Calculus II for the Biological Sciences  
MATH 158-3 Calculus for the Social Sciences II

and one of

PHYS 101-3 Physics for the Life Sciences I  
PHYS 120-3 Mechanics and Modern Physics\*

and one of

PHYS 102-3 Physics for the Life Sciences II  
PHYS 121-3 Optics, Electricity and Magnetism\*

\*recommended

#### Year Two

CHEM 281-4 Organic Chemistry I  
EASC 201-3 Stratigraphy and Sedimentation  
EASC 206-1 Field Geology I  
EVSC 200-3 Introduction to Environmental Science  
MATH 232-3 Elementary Linear Algebra  
MATH 251-3 Calculus III  
STAT 270-3 Introduction to Probability and Statistics

and one of

CMPT 120-3 Introduction to Computing Science  
Programming I

CMPT 102-3 Introduction to Scientific Computer  
Programming\*

#### Years Three and Four

BISC 102-4 General Biology  
EASC 202-3 Mineralogy  
EASC 304-3 Hydrogeology  
EASC 410-3 Groundwater Geochemistry and Contaminant Transport  
EVSC 401-1 Current Topics in Environmental Science  
GEOG 311-4 Hydrology  
MATH 252-3 Vector Calculus  
MATH 310-3 Introduction to Ordinary Differential Equations  
MATH 314-3 Boundary Value Problems  
STAT 285-3 Intermediate Probability and Statistics

and one of

GEOG 214-3 Climate and Environment  
GEOG 213-3 Introduction to Geomorphology

and one of

BISC 204-3 Introduction to Ecology  
GEOG 215-3 Biogeography

and at least 24 upper division units of electives selected from the following. Note that some courses may require lower division prerequisites.

BISC 312-3 Environmental Toxicology I  
BISC 414-3 Limnology  
CHEM 316-4 Introductory Instrumental Analysis  
CHEM 317-3 Analytical Environmental Chemistry  
CHEM 360-3 Chemical Kinetics and Thermodynamics  
CHEM 371-3 Chemistry of the Aqueous Environment  
CHEM 372-3 Chemistry of the Atmospheric Environment  
EASC 303-3 Environmental Geoscience  
EASC 307-3 Applied Geophysics

EASC 313-3 Introduction to Soil and Rock Engineering  
EASC 403-3 Quaternary Geology  
EASC 416-3 Field Techniques in Hydrogeology  
EVSC 491W-3 Advanced Field Studies in Environmental Science

GEOG 313-4 River Geomorphology  
GEOG 314-4 Weather and Climate  
GEOG 315-4 World Ecosystems  
GEOG 316-4 Ecosystem Biogeochemistry  
GEOG 317-4 Soil Science  
GEOG 354-4 Introduction to Geographic Information Systems

GEOG 414-4 Advanced Climatology  
GEOG 415-4 Advanced Biogeography  
MATH 322-3 Complex Variables  
MATH 415-3 Ordinary Differential Equations  
MATH 416-3 Numerical Analysis II  
MATH 418-3 Partial Differential Equations

MATH 462-3 Fluid Dynamics  
MATH 467-3 Dynamical Systems  
MACM 316-3 Numerical Analysis I

NUSC 341-3 Introduction to Radiochemistry  
PHYS 346-3 Energy and the Environment  
REM 311-3 Applied Ecology and Sustainable Environments  
REM 356-3 Management Institutions  
REM 412-3 Environmental Modelling  
REM 445-3 Environmental Risk Assessment and Management of Hazardous Substances  
STAT 403-3 Intermediate Sampling and Experimental Design

### Suggested Groupings of Courses

The following groupings of courses for different focuses are suggested.

#### Aqueous Biology Focus

BISC 312-3 Environmental Toxicology I  
BISC 414-3 Limnology  
CHEM 360-3 Chemical Kinetics and Thermodynamics  
GEOG 315-4 World Ecosystems  
GEOG 316-4 Ecosystem Biogeochemistry  
GEOG 415-4 Advanced Biogeography  
REM 311-3 Applied Ecology and Sustainable Environments  
REM 412-3 Environmental Modelling

#### Aqueous Chemistry Focus

BISC 414-3 Limnology  
CHEM 316-4 Introductory Instrumental Analysis  
CHEM 317-2 Analytical Environmental Geography  
CHEM 360-3 Chemical Kinetics and Thermodynamics  
CHEM 371-3 Chemistry of the Aqueous Environment  
EASC 416-3 Field Techniques in Hydrogeology  
NUSC 341-3 Introduction to Radiochemistry  
REM 412-3 Environmental Modelling  
REM 445-3 Environmental Risk Assessment and Management of Hazardous Substances

#### Earth Properties Focus

EASC 303-3 Environmental Geoscience  
EASC 307-3 Applied Geophysics  
EASC 313-3 Introduction to Soil and Rock Engineering  
EASC 403-3 Quaternary Geology  
EASC 416-3 Field Techniques in Hydrogeology  
GEOG 313-4 River Geomorphology  
GEOG 317-4 Soil Science  
GEOG 354-4 Introduction to Geographic Information Systems  
STAT 403-3 Intermediate Sampling and Experimental Design

#### Atmospheric Focus

BISC 312-3 Environmental Toxicology I  
CHEM 360-3 Chemical Kinetics and Thermodynamics  
CHEM 372-3 Chemistry of the Atmospheric Environment

GEOG 314-4 Weather and Climate  
GEOG 414-4 Advanced Climatology  
NUSC 341-3 Introduction to Radiochemistry  
PHYS 346-3 Energy and the Environment  
REM 412-3 Environmental Modelling

#### Transport Modelling Focus

EASC 416-3 Field Techniques in Hydrogeology  
GEOG 354-4 Introduction to Geographic Information Systems  
MATH 322-3 Complex Variable  
MATH 416-3 Numerical Analysis II  
MATH 418-3 Partial Differential Equations  
MATH 467-3 Dynamical Systems  
MATH 462-3 Fluid Dynamics  
MACM 316-3 Numerical Analysis I  
REM 412-3 Environmental Modelling  
STAT 403-3 Intermediate Sampling and Experimental Design

### Quantitative Techniques for Resource Management

#### Year One

BISC 101-4 General Biology  
BISC 102-4 General Biology  
CHEM 120-3 General Chemistry I  
CHEM 122-2 General Chemistry II  
ECON 103-4 Principles of Microeconomics  
REM 100-3 Global Change

and one of

MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences  
MATH 157-3 Calculus for the Social Sciences I

and one of

MATH 152-3 Calculus II  
MATH 155-3 Calculus II for the Biological Sciences  
MATH 158-3 Calculus for the Social Sciences II

and one of

PHYS 101-3 Physics for the Life Sciences I  
PHYS 120-3 Mechanics and Modern Physics

#### Year Two

BISC 204-3 Introduction to Ecology  
ECON 105-4 Principles of Macroeconomics  
ECON 260-3 Environmental Economics  
EVSC 200-3 Introduction to Environmental Science  
GEOG 111-3 Earth Systems  
MATH 232-3 Elementary Linear Algebra  
MATH 251-3 Calculus III  
STAT 270-3 Introduction to Probability and Statistics

and one of

CMPT 120-3 Introduction to Computing Science and Programming I

CMPT 102-3 Introduction to Scientific Computer Programming

and one of

PHYS 102-3 Physics for the Life Sciences II  
PHYS 121-3 Optics, Electricity and Magnetism

#### Year Three

BISC 304-3 Animal Ecology  
MACM 316-3 Numerical Analysis I  
MATH 308-3 Linear Programming  
MATH 310-3 Introduction to Ordinary Differential Equations  
PHYS 346-3 Energy and the Environment  
STAT 285-3 Intermediate Probability and Statistics  
STAT 350-3 Linear Models in Applied Statistics

#### Year Four

BISC 407-3 Population Dynamics  
EVSC 401-1 Current Topics in Environmental Science  
MATH 309-3 Continuous Optimization  
STAT 402-3 Generalized Linear and Nonlinear Modelling  
STAT 410-3 Statistical Analysis of Sample Surveys  
STAT 430-3 Statistical Design and Analysis of Experiments

and at least four courses from the following to be completed in years three or four

BISC 300-3 Evolution  
BISC 305-3 Animal Physiology  
ECON 261-3 Resources and the Economy of British Columbia  
EVSC 491W-3 Advanced Field Studies in Environmental Science  
GEOG 354-4 Introduction to Geographic Information Systems  
REM 311-3 Applied Ecology and Sustainable Environments  
REM 356-3 Management Institutions  
REM 412-3 Environmental Modelling  
REM 445-3 Environmental Risk Assessment and Management of Hazardous Substances  
REM 471-3 Forest Ecosystem Management

### Electives

Additional electives are required to meet the total graduation requirement of 120 units, including at least 44 at the upper division.

### Suggested Groupings of Courses

The following groupings of courses for different focuses are suggested.

#### Fisheries Focus

BISC 300-3 Evolution  
BISC 305-3 Animal Physiology  
GEOG 354-4 Introduction to Geographic Information Systems  
REM 311-3 Applied Ecology and Sustainable Environments  
REM 356-3 Management Institutions  
REM 412-3 Environmental Modelling

#### Economic Focus

ECON 261-3 Resources and the Economy of British Columbia  
GEOG 354-4 Introduction to Geographic Information Systems  
REM 311-3 Applied Ecology and Sustainable Environments  
REM 356-3 Management Institutions  
REM 445-3 Environmental Risk Assessment and Management of Hazardous Substances

#### Forestry Focus

ECON 261-3 Resources and the Economy of British Columbia  
GEOG 354-4 Introduction to Geographic Information Systems  
REM 311-3 Applied Ecology and Sustainable Environments  
REM 356-3 Management Institutions  
REM 471-3 Forest Ecosystem Management

## Honors Program

This program requires 132 units including writing, quantitative and breadth requirements (see page 7). At least 60 must be upper division, at least 48 must be in one subject area and are normally from the 300-400 division required or optional courses in an area of emphasis. Exceptions must be approved by a faculty advisor. Further requirements are listed in each area of emphasis. Minimum CGPA for continuation and graduation is 3.00. University and Faculty of Science regulations also apply.

## Biology

Students complete all requirements in the major program, plus all requirements for the honors program. The required 48 upper division units in a specific subject requires all of  
BISC 490-5 Research Design  
BISC 491-5 Research Technique  
BISC 492-5 Research Reporting

Other courses may be substituted subject to the approval of a faculty advisor.

## Chemistry

Students complete all requirements for this major program area of emphasis, plus all requirements for the honors program, and also

CHEM 481-5 Undergraduate Research

To fulfil the required 48 upper division units in a specific subject, students choose further major program courses as options in years three and four. Other courses may substitute, subject to faculty advisor approval.

## Environmetrics

Students complete all requirements for this area of emphasis in the major program, plus all requirements for the honors program, and also both of

STAT 330-3 Introduction to Mathematical Statistics  
STAT 450-3 Statistical Theory

To fulfil the required 48 upper division units in a specific subject area, students normally will choose further courses listed in the major program as options in years three and four. Other courses may be substituted on approval of a faculty advisor.

## Physical Geography

Students complete all area of emphasis requirements, plus all honors requirements. To fulfil the required 48 upper division units in a specific subject area, students must complete

GEOG 491-4 Honors Essay

and choose further major program courses as options in years three and four. Other courses may be substituted with the approval of a faculty advisor.

## Pollutant Transport

Students complete all requirements for this area of emphasis in the major program, plus all requirements for the honors program. To fulfil the required 48 upper division units in a specific subject area, the student normally will choose further courses listed in the major program as options in years three and four. Students wishing to use a research thesis towards meeting this requirement may seek approval from a faculty member in earth sciences to enrol in EASC 499. Other courses may be substituted with approval of a faculty advisor.

## Quantitative Techniques for Resource Management

Students complete all major program requirements for this area of emphasis plus all honors program requirements. To fulfil the 48 upper division units in a specific subject area, students normally choose further courses listed in the major program as options in years three and four. Other courses may be substituted with approval of a faculty advisor.

## Co-operative Education

This program combines relevant work experience with academic studies. Students alternate study terms with study-related employment. The program includes pre-employment orientation and four full-time paid work terms. A major and honors program leading to an environmental science BSc degree and co-op education are available to qualified students.

To enrol, students should attend co-op information meetings held in the term's first two weeks prior to the term in which they wish to work. Also seek advice from Faculty of Science co-op education as early as possible in the university career to facilitate optimal scheduling. For information, contact the co-operative education co-ordinator, Science and Environment Co-op Program, Department of Geography, 7130 Robert C. Brown Hall, 778.782.3115 Tel.

## Qualifications for Registered Professional Biologist of BC

Registered professional biologist (RPBio) status is an important, common qualification for BC biologists practising in BC. Environmental science students can meet the academic qualifications by completing three more 200 division or higher biology courses beyond the biology stream requirements. RPBio status is then possible after three years of appropriate work experience and completion of an acceptable professional report. Students and graduates may join the College of Applied Biology of BC (CAB) as *student biologists* and *biologists in training* respectively, before they meet all of the qualifications. Contact the biology stream advisor or the College of Applied Biology of BC at cab@cab-bc.org

## Department of Geography

7123 Robert C. Brown Hall, 778.782.3321 Tel, 778.782.5841 Fax, www.sfu.ca/geography

### Chair

R. Hayter BA (Newcastle, UK), MA (Alta), PhD (Wash)

### Professors Emeriti

R.C. Brown BS, MS (Oregon State), PhD (Mich State)  
C.B. Crampton BSc, PhD (Brist)  
A. MacPherson MA (Edin), FRMetS  
T.K. Poiker PhD (Heidel)  
M.C. Roberts BSc (Lond), MA (Tor), PhD (Iowa), PGeo  
P.L. Wagner AB, MA, PhD (Calif)  
J.W. Wilson BSc (Glas), MSc (MIT), MPP (N Carolina)  
S.T. Wong AB (Augustana, Ill), AM (Yale), PhD (Chic)

### Professors

N.K. Blomley BSc, PhD (Brist)  
A.M. Gill BA (Hull), MA (Alta), PhD (Manit)\*\*\*  
R. Hayter BA (Newcastle, UK), MA (Alta), PhD (Wash)  
E.J. Hickin BA, PhD (Syd), PGeo  
J.T. Pierce BA (Tor), MA (Wat), PhD (Lond)  
M.L. Roseland, BA MA (Wesleyan, Conn), PhD (Br Col)

### Associate Professors

T.A. Brennand MA (Camb), PhD (Alta)  
J.A.C. Brohman BA (Car), MA, PhD (Calif)  
R.A. Clapp BA (Yale), MA, PhD (Calif)  
S. Dragicevic BEng (Belgrade), MSc (Belgrade), PhD (Montr)  
J. Hyndman BA (Alta), MA (Lanc), PhD (Br Col)  
L.F.W. Lesack BSc (Manit), PhD (Calif)\*  
E. McCann MA (Glas), MA (Miami, Ohio), PhD (Kentucky)  
M.G. Schmidt BSc (Guelph), MSc (Lakehead), PhD (Br Col)  
N.C. Schuurman BSc (Nfld), MA, PhD (Br Col)  
J. Taylor BS, MA (Ore), PhD (Wash)\*\*

### Assistant Professors

V.A. Crooks BA (WOnt), MA, PhD (McM)  
N. Hedley BSc (Lanc), MA (Colorado), PhD (Wash)  
M. Holden BSc (Vic, BC), MS (Rutgers), PhD (NY State)\*\*\*\*  
P.T. Kingsbury BA (Wales), MA, PhD (Kentucky)  
G.P. Mann BA (McGill), MSc (Guelph), PhD (Calif)  
J. Sturgeon BA (Calif), MA (Wash), PhD (Yale)  
I. Tromp-van Meerveld BSc, MSc (Vrije, Amsterdam), PhD (Oregon State)  
J. Venditti BSc (Guelph), MSc (S Calif), PhD (Br Col)

### Senior Lecturers

O. Hertzman, BASc, MSc (Br Col), PhD (Wash)  
I. Winton MA (Glas), MA (Br Col), PhD (Minn)

**Lecturer**

S. Balram BSc (Guy), MPhil (Camb), PhD (McG)

**Associate Members**

W.G. Gill, Vice-President, University Relations

M.V. Hayes, Faculty of Health Sciences

S. Markey, Explorations Program

**Adjunct Professors**

O. Lian BSc, MSc (S Fraser), PhD (WOnt)

L.J.B. McArthur BSc (McM), MSc (Br Col),

PhD (McM)

**Advisor**Ms. R. Multani, 7126 Robert C. Brown Hall,  
778.782.4529

\*joint appointment with biological sciences

\*\*joint appointment with history

\*\*\*joint appointment with resource and environmental  
management

\*\*\*\*joint appointment with urban studies

**Writing, Quantitative, and Breadth  
Requirements**Students completing degree programs must fulfil  
writing, quantitative and breadth requirements as part  
of their program. See "Writing, Quantitative, and  
Breadth Requirements" on page 7 for information.**BA Geography Major Program**Students must complete 120 units including 45 upper  
division (see "Graduation Requirements" on  
page 170). Transfer students may enter without  
fulfilling all lower division requirements. See the  
advisor as soon as possible about program entry.**Lower Division Requirements**

Students complete all of

GEOG 100-3 Human Geography

GEOG 111-3 Earth Systems

GEOG 221-3 Economic Geography

GEOG 241-3 Social Geography

and one of

GEOG 213-3 Introduction to Geomorphology

GEOG 214-3 Climate and Environment

GEOG 215-3 Biogeography

and one of

GEOG 251-3 Quantitative Geography

GEOG 253-3 Aerial Photographic Interpretation

GEOG 255-3 Geographical Information Science I

18 units

**Upper Division Requirements**Consult with an advisor when formally declaring a  
geography major, or risk prolonging the program.Students complete 32 units of 300 and 400 division  
courses in geography, including at least eight units at  
the 400 division and one of the following.

GEOG 311-4 Hydrology

GEOG 312-4 Geography of Natural Hazards

GEOG 313-4 River Geomorphology

GEOG 314-4 Weather and Climate

GEOG 315-4 World Ecosystems

GEOG 316-4 Ecosystem Biogeochemistry

GEOG 317-4 Soil Science

32 units

**BA Geography – Environmental  
Specialty Major Program****Lower Division Requirements**

Students complete all of

GEOG 100-3 Human Geography

GEOG 111-3 Earth Systems

GEOG 215-3 Biogeography

GEOG 221-3 Economic Geography

GEOG 241-3 Social Geography

and one of

GEOG 251-3 Quantitative Geography

GEOG 253-3 Aerial Photographic Interpretation

GEOG 255-3 Geographical Information Science I

and the following two trans-disciplinary core courses

EVSC 200-3 Introduction to Environmental Science

REM 100-3 Global Change 24 units

**Upper Division Requirements**A minimum of 32 upper division units as follows is  
required, including four of the following core courses.

GEOG 322-4 World Resources

GEOG 377-4 Environmental History

GEOG 382-4 Population Geography

GEOG 385-4 Agriculture and the Environment

GEOG 389W-4 Human Ecology: Human Relations to  
NatureREM 311-3 Applied Ecology and Sustainable  
EnvironmentsREM 356-3 Institutional Arrangements for  
Sustainable Environmental Management

14-16 units

plus one of

GEOG 311-4 Hydrology

GEOG 312-4 Geography of Natural Hazards

GEOG 313-4 River Geomorphology

GEOG 314-4 Weather and Climate

GEOG 315-4 World Ecosystems

GEOG 316-4 Ecosystem Biogeochemistry

GEOG 317-4 Soil Science

4 units

plus one of

GEOG 351-4 Cartography and Visualization

GEOG 352-4 Spatial Analysis

GEOG 353-4 Remote Sensing

GEOG 355-4 Geographical Information Science II

GEOG 356-4 3D Geovisualization

GEOG 391-4 Qualitative Research Methods 4 units

plus two of

GEOG 426-4 Industrial Change and Local  
Development

GEOG 428-4 World Forests

GEOG 429-4 Environment and Inequality

GEOG 432-4 Problems in Environmental History

GEOG 445-4 Resource Planning

GEOG 449-4 Environmental Processes and Urban  
Development

GEOG 468-4 Society and Environment in China

REM 445-3 Environmental Risk Assessment

REM 471-3 Forest Ecosystem Management

6-8 units

plus additional upper division (300 and 400 division)  
units in geography needed for 32 units minimum.**BSc Geographic Information  
Science Major and Honors  
Programs**Offered by the School of Computing Science and the  
Department of Geography, students may pursue  
major or honors leading to BSc or BSc (honors)  
degrees within the Faculty of Applied Sciences.**BSc Physical Geography Major  
Program**Students should contact the advising committee to  
plan the course work for recommended options:  
biogeography, climatology or geomorphology.**Lower Division Requirements**

(52-53 units)

**Required Geography Courses**

Students complete both of

GEOG 100-3 Human Geography

GEOG 111-3 Earth Systems

and two of

GEOG 213-3 Introduction to Geomorphology

GEOG 214-3 Climate and Environment

GEOG 215-3 Biogeography

and one of

GEOG 221-3 Economic Geography

GEOG 241-3 Social Geography

and one of

GEOG 250-3 Cartography I

GEOG 253-3 Aerial Photographic Interpretation

GEOG 255-3 Geographical Information Science I

18 units

**Required Faculty of Science Courses**

Students complete all of

BISC 101-4 General Biology

BISC 102-4 General Biology

CHEM 121-4 General Chemistry and Laboratory I

CHEM 122-2 General Chemistry II

EASC 101-3 Physical Geology

and one of

PHYS 101-3 General Physics I\*

PHYS 120-3 Modern Physics and Mechanics

and one of

PHYS 102-3 General Physics II\*

PHYS 121-3 Optics, Electricity and Magnetism

and one of

PHYS 130-2 General Physics Laboratory\*

PHYS 131-2 Physics Laboratory I

and one of

STAT 270-3 Introduction to Probability and Statistics

STAT 201-3 Statistics for the Life Sciences

and one of

MATH 150-4 Calculus I

MATH 151-3 Calculus I

MATH 154-3 Calculus I for the Biological Sciences

and one of

MATH 152-3 Calculus II

MATH 155-3 Calculus II for the Biological Sciences

34-35 units

\*a minimum grade may be required to serve as a  
prerequisite to certain Faculty of Science coursesSee "Physics PHYS" on page 428 for possible  
physics course substitutions.**Upper Division Requirements**

(45 units)

**Required Geography Courses**

Students complete three of

GEOG 311-4 Hydrology

GEOG 313-4 River Geomorphology

GEOG 314-4 Weather and Climate

GEOG 315-4 World Ecosystems

GEOG 316-4 Ecosystem Biogeochemistry

GEOG 317-4 Soil Science

and one of

GEOG 322-4 World Resources

GEOG 323-4 Industrial Location

GEOG 324-4 Geography of Transportation

GEOG 325-4 Geographies of Consumption

GEOG 327-4 Geography of Tourism

GEOG 362-4 Geography of Urban Development

GEOG 369-4 Human Microgeography

GEOG 381-4 Political Geography

GEOG 382-4 Population Geography

GEOG 383-4 Regional Development and Planning I

GEOG 385-4 Agriculture and the Environment

GEOG 386-4 Geography, Health and Health Care

GEOG 387-4 Geography and Gender

GEOG 389W-4 Human Ecology: Human Relations to  
Nature

and one of

GEOG 301-4 Geographic Ideas and Methodology

GEOG 351-4 Cartography and Visualization

GEOG 352-4 Spatial Analysis

GEOG 353-4 Remote Sensing  
 GEOG 355-4 Geographical Information Science II  
 GEOG 356-4 3D Geovisualization 20 units

and two of

GEOG 411-4 Advanced Hydrology  
 GEOG 412-4 Glacial Processes and Environments  
 GEOG 413-4 Advanced River Geomorphology  
 GEOG 414-4 Advanced Climatology  
 GEOG 415-4 Advanced Biogeography  
 GEOG 416W-4 Pleistocene Geography  
 GEOG 417-4 Advanced Soil Science

**plus eight additional upper division units** from any 300 or 400 division courses in geography 16 units

#### Faculty of Science Courses

Students complete a minimum of nine units from 300 to 400 division BISC, CHEM, EASC, MASC, MATH, MBB, NUSC, PHYS and STAT courses. 9 units

Students complete 44 upper division units (excluding EDUC 401, 402, 405 and 406), and additional credit in any courses (excluding EDUC 401, 402, 405 and 406) to total 120 units.

### BA Geography Honors Program

Students complete all the major program requirements (see above) plus at least 10 additional units from 300 and 400 division courses in geography, and the following courses.

GEOG 301-4 Geographic Ideas and Methodology  
 GEOG 491-4 Honors Essay 18 units

A total of 132 units is required, of which 60 must be at the upper division. To graduate with honors, students must have a grade point average of not less than 3.00. See "Grade Point Averages" on page 30.

Program entry requires the approval of the department and an admission GPA of 3.00.

### BA Geography – Environmental Specialty Honors Program

Students complete all environmental specialty major requirements (see above) plus

GEOG 301-4 Geographic Ideas and Methodology  
 GEOG 491-4 Honors Essay

and any additional 400 division geography units to total 50 upper division units. An overall total of 132 units is required, of which 60 must be in upper division. Honors students must have a grade point average of not less than 3.00. See "Grade Point Averages" on page 30.

Program entry requires the approval of the department and an admission GPA of 3.00.

### BSc Physical Geography Honors Program

This is the same as the physical geography major except that it includes 60 units minimum of 300 to 400 division courses, of which 48 must be in geography or other closely related science subjects approved by the department. Seek Department of Geography advice in advance about suitability of courses. GEOG 491 (honors essay) may be included in these 48 units. The remaining 12 upper division units must be from BISC, CHEM, EASC, MASC, MATH, MBB, NUSC, PHYS or STAT courses. A total of 132 units is required and a 3.00 graduation GPA. See "General Regulations" on page 32. Honors program entry requires department approval.

### BA Geography Minor Program

Students are expected to consult with a departmental advisor when they formally declare a minor in

geography. Those who do not seek advice from the department run a risk of prolonging their programs.

#### Lower Division Requirements

Students complete both of  
 GEOG 100-3 Human Geography  
 GEOG 111-3 Earth Systems

and one of

GEOG 221-3 Economic Geography  
 GEOG 241-3 Social Geography

and one of

GEOG 251-3 Quantitative Geography  
 GEOG 253-3 Aerial Photographic Interpretation  
 GEOG 255-3 Geographical Information Science I 12 units

#### Upper Division Requirements

Students complete a minimum of 15 units in GEOG courses numbered 300 and 400. 15 units  
 Total 27 units

### BSc Physical Geography Minor Program

#### Lower Division Requirements

Students complete both of  
 GEOG 100-3 Human Geography  
 GEOG 111-3 Earth Systems

and one of

GEOG 250-3 Cartography I  
 GEOG 253-3 Aerial Photographic Interpretation  
 GEOG 255-3 Geographical Information Science I

#### Upper Division Requirements

A minimum of 15 units is required to be selected from the following or their equivalents.

GEOG 311-4 Hydrology  
 GEOG 313-4 River Geomorphology  
 GEOG 314-4 Weather and Climate  
 GEOG 315-4 World Ecosystems  
 GEOG 316-4 Ecosystem Biogeochemistry  
 GEOG 317-4 Soil Science  
 GEOG 411-4 Advanced Hydrology  
 GEOG 412-4 Glacial Processes and Environments  
 GEOG 413-4 Advanced River Geomorphology  
 GEOG 414-4 Advanced Climatology  
 GEOG 415-4 Advanced Biogeography  
 GEOG 416W-4 Pleistocene Geography  
 GEOG 417-4 Advanced Soil Science

### Extended Minor Programs

Students are expected to consult with a departmental advisor when they formally declare an extended minor in geography. The programs consist of the lower division requirements for a major and the upper division requirements for a minor (see above).

### Geography and Business Administration Joint Major Program

See "Business Administration and Geography Joint Major Program" on page 147 for requirements.

### Geography and Canadian Studies Joint Major Program

See "Joint Major Programs" on page 96.

### Geography and Latin American Studies Joint Major Program

See "Joint Major Programs" on page 96.

### Geography and Economics – Environmental Specialty BA Joint Major Program

#### Lower Division Requirements

##### Economics

Students complete the same requirements as for the economics major program and also complete ECON 260. The latter course can be counted as one of the 200 division requirements.

##### Geography

Students complete the same requirements as for the geography – environmental specialty major program.

#### Upper Division Requirements

##### Economics

Students complete 25 units in economics including BUEC 333-4 Statistical Analysis of Economic Data  
 ECON 301-4 Microeconomic Theory I: Competitive Behavior

ECON 302-4 Microeconomic Theory II: Strategic Behavior

ECON 305-5 Intermediate Macroeconomic Theory  
 ECON 362-4 Economics of Natural Resources

and at least one 400 division ECON or BUEC course (excluding ECON 431, 435, BUEC 433 and 485).

##### Group Requirements

Students must include at least one course from the economics group requirements. For details, See "Group Requirements" on page 105.

##### Geography

Students complete 24 units in geography including GEOG 322-4 World Resources  
 GEOG 382-4 Population Geography

plus one of

GEOG 323-4 Industrial Location  
 GEOG 383-4 Regional Development and Planning I  
 GEOG 385-4 Agriculture and the Environment  
 GEOG 386-4 Geography, Health and Health Care

plus three of

GEOG 422-4 Theories and Practices of Development  
 GEOG 426-4 Industrial Change and Local Development  
 GEOG 444-4 Regional Development and Planning II  
 GEOG 449-4 Environmental Processes and Urban Development

plus the following five core courses

GEOG 389W-4 Human Ecology: Human Relations to Nature

GEOG 428-4 World Forests

GEOG 445-4 Resource Planning

REM 311-3 Applied Ecology and Sustainable Environments

REM 356-3 Institutional Arrangements for Sustainable Environmental Management

##### Breadth Requirements

The following are recommended to fulfil the Faculty of Arts and Social Sciences breadth requirements.

ARCH 201-3 Introduction to Archaeology

ARCH 365-3 Ecological Archaeology

ARCH 386-3 Archaeological Resource Management

CMNS 347-4 Communication in Conflict and Intervention

CMNS 446-4 The Communication of Science and the Transfer of Technology

HUM 325-4 The Humanities and the Natural World

PHIL 120W-3 Introduction to Moral Philosophy

PHIL 144-3 Introduction to the Philosophy of Natural and Social Science

SA 371-4 The Environment and Society

## Certificate in Spatial Information Systems

### Admission Requirements

Consult with the advisor as early as possible for program admission. Formal approval is required before completion of the certificate. Units applied to one certificate may not be applied to another Simon Fraser University certificate or diploma.

### Requirements

To qualify for the certificate, students complete the following courses (or their equivalents from another department or institution) including all of  
GEOG 251-3 Quantitative Geography  
GEOG 253-3 Aerial Photographic Interpretation  
GEOG 255-3 Geographical Information Science I

plus three of  
GEOG 351-4 Cartography and Visualization  
GEOG 352-4 Spatial Analysis  
GEOG 353-4 Remote Sensing  
GEOG 355-4 Geographic Information Science II  
GEOG 356-4 3D Geovisualization

plus two of  
GEOG 451-4 Spatial Modeling  
GEOG 455-4 Theoretical and Applied GIS  
GEOG 457-4 Geovisualization Interfaces

### Certificate in Urban Studies

This certificate studies the nature and functions of the contemporary city from an interdisciplinary perspective of geography, political science, sociology and anthropology. Completion is possible in one year but additional terms may be required. It is suited to those contemplating careers in urban planning, governance or consulting. Units applied to one certificate may not be applied to another Simon Fraser University certificate or diploma.

### Admission Requirements

Normal requirements for admission to Simon Fraser University apply. Prior to formal approval into the certificate program, students complete two of  
GEOG 100-3 Human Geography  
POL 100-3 Introduction to Politics and Government (or 151)  
SA 101-4 Introduction to Anthropology (or 150)

### Course Requirements

Students will successfully complete eight courses for a total of 29 or 30 units, including all of  
GEOG 261-3 Introduction to Urban Geography  
POL 252-3 Local Democracy and Governance  
SA 201W-4 Anthropology and Contemporary Life  
and at least three of  
GEOG 325-4 Geography of Consumption  
GEOG 362-4 Geography of Urban Development  
GEOG 363-4 Urban Planning and Policy  
HUM 340-4 Great Cities in Their Time  
POL 352-4 Urban and Local Governance in Canada  
POL 354-4 Comparative Metropolitan Governance  
SA 302W-4 Global Problems and the Culture of Capitalism  
SA 362-4 Society and the Changing Global Division of Labour  
SA 364-4 Urban Communities and Cultures  
and at least one of these four capstone seminars  
GEOG 441-4 Cities, Space, and Politics  
GEOG 449-4 Environmental Processes and Urban Development  
POL 454-4 Urban Public Policy Making  
POL 458-4 Selected Topics in Local and Urban Governance  
and at least one of these research methods courses  
GEOG 251-3 Quantitative Geography

GEOG 255-3 Geographical Information Science I  
GEOG 391-4 Qualitative Research Methods  
POL 201-3 Research Methods in Political Science  
POL 315-4 Quantitative Methods in Political Science  
SA 255-4 Introduction to Social Research  
SA 356W-4 Ethnography and Qualitative Methods

Of the eight required courses, no more than four may be in any one department. Substitutions may be approved on a case-by-case basis by the advisor.

### Professional Registration as a BC Geoscientist

The right to practise in and to accept professional responsibility for geoscience in BC is limited to registered members of the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC). Registration requirements can be met through the physical geography BSc major program and selected courses in other university departments. Consult the undergraduate advisor in the Department of Geography for details.

### Co-operative Education

This program integrates workplace learning with academic studies via alternate academic terms with four full-time paid work terms. Apply to co-operative education as early as possible to facilitate optimal scheduling. To enter, geography students must have a minimum 2.75 cumulative grade point average (CGPA), and must maintain a 2.5 CGPA to continue in the program. University and college transfer students who have previously participated in co-op elsewhere may be credited with the term(s) already completed.

To enrol, students should attend a co-op information session that is held during the first week of classes every term or visit the environment co-op co-ordinator. For further information and contact details, please visit the Science and Environment Co-op Program at <http://www.sfu.ca/coop/science>.

## Centre for Sustainable Community Development

2622 West Mall Complex, 778.782.5849 Tel,  
778.782.5473 Fax, [www.sfu.ca/cscd](http://www.sfu.ca/cscd)

#### Director

M.L. Roseland, BA MA (Wesleyan, Conn),  
PhD (Br Col)

#### Associate Member

S. Markey, Explorations in the Arts and Social  
Sciences Program

#### Advisor

2622 West Mall Complex, 778.782.5849,  
[scdadmin@sfu.ca](mailto:scdadmin@sfu.ca)

Sustainable community development (SCD) integrates economic, social and environment objectives in community development. Sustainable community development is based on the relationship between economic factors and other community elements such as housing, education, the natural environment, health accessibility and the arts. SCD has emerged as a compelling alternative to conventional approaches to development, a participatory, holistic and inclusive process that leads to positive, concrete changes in communities by creating employment, reducing poverty, restoring the health of the natural environment, stabilizing local economies, and increasing community control.

The Centre for Sustainable Community Development (CSCD), formerly the Community Economic

Development Centre, was founded in 1989. It supports the sustainable development of communities through education, research, and community mobilization. It provides research, training, and advisory services throughout BC and Canada, as well as internationally. The CSCD offers an undergraduate certificate and post baccalaureate diploma (also available through distance education), graduate support, and a non-credit professional program.

### Certificate

This program offers basic accreditation in sustainable community development and is for those who seek an holistic, active, practical credential either as part of an undergraduate degree or as a stand-alone certificate. General certificate regulations apply. Courses completed for this certificate may also apply toward major or minor program requirements or toward a bachelor's degree under normal regulations. This program may be completed by distance education.

### Admission Requirements

General undergraduate admission to the university and formal application for program approval with the Centre for SCD. Students must normally complete 30 units before applying for this program.

Application deadlines: May 1 for fall term, October 1 for spring term, February 1 for summer term, Intercession and summer session.

### Program Requirements

Students complete a minimum of 19 units of required courses and approved elective courses, attain at least a C+ grade in SCD 201 and SCD 301 for program continuance, and must maintain at least a 2.5 CGPA in all SCD courses to obtain the certificate.

Students complete 15 units from the following four required courses.

SCD 201-3 Introduction to Sustainable Community Development  
SCD 301-4 Sustainable Community Development Theory and Practice  
SCD 401-4 Social Enterprise for Sustainable Community Development  
SCD 403-4 Leadership in Sustainable Community Development

The remaining minimum of four units are selected from a list of multidisciplinary courses approved by the Centre or other electives approved by the director. These include SCD 410 Special Topics, offered annually with a changing SCD related topic. Under circumstances where fieldwork or work experience is not available as part of a student's major, minor or co-op program, the student may apply to complete SCD 404 Project as their elective. Selecting a three credit elective means that more than one elective will be required to fulfil the minimum units for completion of the certificate. Electives may be either upper or lower division courses, but must be approved by the CSCD. Courses in other departments may have prerequisites not included in this certificate program.

### Transfer Credit

Transfer credit for work done at other institutions, before or after program admission, may be approved toward program fulfillment provided they meet centre's requirements for community economic development relevance and that at least half of the total unit requirements are completed at Simon Fraser University. All other requirements for transfer credit under general undergraduate regulations apply.

### Limits

Those who complete the undergraduate certificate cannot enrol in the post baccalaureate diploma program (PBD). Those who have completed the CED



or sustainable community development (SCD) PBD may not enrol in this certificate. Those who have completed CED 400 or CED 402 may not complete SCD 201 or SCD 301 for credit toward the certificate.

More information is available at [www.sfu.ca/cscd](http://www.sfu.ca/cscd). See also "Centre for Sustainable Community Development" on page 176.

## Post Baccalaureate Diploma

This program is for those with an undergraduate degree or equivalent. The diploma is applicable to a wide range of occupational, professional and academic fields. By combining courses from several disciplines with a specially designed core of study and opportunities for guided practice, the program provides unique perspectives on sustainable community development.

### Admission Requirements

General undergraduate admission to the University and formal application for program approval with the centre is required. Students must complete a bachelor's degree or equivalent before applying to this program.

Application deadlines: May 1 for fall term, October 1 for spring term, February 1 for summer term, Intercession and summer session.

For information about post baccalaureate diploma program general regulations, see "Post Baccalaureate Diploma Program" on page 7.

### Required Courses

Students complete 30 upper division units, including 16 units in the following required courses.

SCD 301-4 Sustainable Community Development Theory and Practice

SCD 401-4 Social Enterprise for Sustainable Community Development

SCD 403-4 Leadership in Sustainable Community Development

SCD 404-4 Project in Sustainable Community Development

In addition to these required courses, students must complete at least 14 units in elective courses.

### Elective Courses

Select electives from the SCD electives (SCD 410, 412) and from a variety of departments, in consultation with the Centre for Sustainable Community Development's (CSCD) academic supervisor. A list of pre-approved electives is available but students may also propose courses for that meet the following requirements.

- the proposed course must be an upper division course (300-400 division) or higher.
- the elective proposal must be submitted and approved, in writing, before enrolling and include the course description. Students should complete electives early in the enrolment period.
- the proposed course must meet the CSCD's content requirements for being thematically related to SCD or applicable skills for SCD field work. It must be sufficiently related to SCD (e.g. underdevelopment, regional planning, public planning processes) and/or provide research and other skills relevant to SCD practice (e.g. business management, organizational behavior, fieldwork methodologies, qualitative and quantitative analysis). Determination of relevance and applicability will be made by the CSCD academic supervisor or their designate.
- a proposed directed studies course from another department requires a detailed study plan to be approved in advance by the CSCD academic

supervisor and the chosen faculty supervisor. The project's final report must be submitted to the centre as well as to the named faculty member.

- Students are responsible for prerequisite or other clearances to gain course entry. Many departments waive introductory courses for those with extensive experience. However, other Simon Fraser University departments give course enrolment priority to their own students and will not necessarily permit SCD students to enrol. Check all Calendar entries and consult both department and CSCD advisors before enrolling.

Other restrictions may apply.

### Transfer Credit

Transfer credit for work done at other institutions, before or after admission to the program, may be approved provided it meets SCD requirements for relevance to sustainable community development and provided that at least 18 of the total units are completed at Simon Fraser University. All other requirements for transfer credit under general post baccalaureate programs regulations apply.

Applications for transfer credit must be initiated at the time of application for admission to Simon Fraser University or by requesting a Letter of Permission from the admissions office. A GPA of 2.5 in all required and elective courses must be maintained in order to be credited toward the diploma and for continuance in the program.

More information on the centre and its programs is available at the Centre for Sustainable Community Development and its web site [www.sfu.ca/cscd](http://www.sfu.ca/cscd)

See also "Centre for Sustainable Community Development" on page 176 for information about research activities.

# Faculty of Health Sciences

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## Dean

J. O'Neil BA, MA (Sask), PhD (Calif)

## Associate Deans

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C. Janes BA (San Diego), MA (Colorado), PhD (Calif)

## Professors

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K.K. Corbett AB (Stan), MPH, MA, PhD (Calif)

B. Fischer BA, MA (Konstanz), PhD (Tor)

E. Goldner BSc (Tor), MD (Calg), MHSc (Br Col)

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M. Joffres BSc(LGFAure), MD (Toulouse),

PhD (Hawaii)

B. Lanphear MD (Missouri), MPH (Tulane)

J.K. Scott AB (Occidental), MD (St Louis), PhD

(Missouri), Canada Research Chair\*

## Associate Professors

T. Beischlag BSc, MSc, PhD (Tor)

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M. Niikura BS, DVMMS, PhD (Hokkaido)

J. Somers BA (S Fraser), MSc, PhD (Wash)

T. Takaro BS (Yale), MD, MPH (N Carolina),

MS (Wash)

C. Waddell BSc, MSc (Br Col), MD (McM), Canada

Research Chair

## Assistant Professors

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G. Prefontaine BSc, MSc, PhD (Ott)

J. Snyder BA, PhD (Georgetown)

R. Tucker BA (McG), MHS (Tor), PhD (Harv)

S. Venners BS (Purdue), MPH, PhD (Tulane)

D. Zabkiewicz BSc (Calif State), MPH (Emory),

PhD (Calif)

L. Zeng BSc (Nankai, China) MSc, PhD (Wat)\*\*

## Senior Lecturer

M. Lechner BS (Notre Dame), PhD (Chic)

## Lecturer

K. Palmer BPE (Calg), MPH, MSc (Hawaii)

## Adjunct Professors of Clinical Practice

B. O'Connor MD, MHSc (Tor)

M. Steinberg BSc, MBBCh (Witwatersrand),

MSc (Lond)

## Adjunct Professors

H. Alamgir BPharm (Dhaka), MBA (Texas),

PhD (Br Col)

J. Barker BSc (Vic, BC), MA (Royal Roads),

PhD (Br Col)

M. Barroetavena MD (Buenos Aires), MHS,

PhD (Br Col)

K. Bell BA, PhD (J Cook)

D. Bilsker BA (McG), MA, PhD (S Fraser)

L. Brotto BA, MA, PhD (Br Col)

D. Brown BA, PhD (Alta)

E. Bruce MA (Regina)

S. Chacko MBA (Col), MPH (Harv), MD (Trivandrum)

A. Chen BSc (Ill), MC (Arizona State), PhD (Br Col)

H. Chodos BA (York, Can), PhD (Manc)

P. Coleridge BSc (Nfld), MA (Tor)

R. Copes BA, BSc (S Fraser), MSc, MD (McG)

R. Doll BA (Alta), MSW (Tor), MSc (Br Col)

M. Fedeles MSc (Kosice), PhD (Br Col)

R. Franche BA (McG), MA, PhD (Br Col)

J. Frankish BA, MA, PhD (Br Col)

S. Ganesan MD (Saigon)

M. Gilbert BA (Br Col), MA (Qu), PhD (S Fraser)

M. Hilson MA (York, Can), RN (Ott Sch Nursing)

L-N. Hsu JD (La Salle), DSc (Harvard)

R. Hudson MD (Alta)

C. Joffres Baccalaureat Economics (Foix),

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W. Jones BA, MSc (Br Col), MA (Tor)

R. Kalra BSc (Punjab), MSc (Br Col), PhD (Temple)

M. Kirby BA, MA (Dal), PhD (WOnt)

L. Korman BA (C'dia), MA, PhD (York, Can)

S. Lewis BA, MA (Sask)

D. Losito BA (S Fraser), MBA (Br Col)

J. Lu BSc, MHSc, MD (Br Col)

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## Associate Members

B. Brandhorst, Department of Molecular Biology and

Biochemistry

F. Brinkman, Department of Molecular Biology and

Biochemistry

R. Corrado, School of Criminology

D. Culhane, Department of Sociology and

Anthropology

C.B. Dean, Department of Statistics and Actuarial

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M. Ester, School of Computing Science

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## Advisors

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\*joint appointment with molecular biology and

biochemistry

\*\*joint appointment with statistics

## Undergraduate Degrees Offered

bachelor of arts

bachelor of arts (honors)

bachelor of science

bachelor of science (honors)

The bachelor of arts in health sciences incorporates multi-disciplinary approaches to the study of health, illness and disease in human communities. The programs focus on the determinants of health, health promotion and disease prevention, health care systems, health policy and health technology. It features work that joins the biological, social, behavioral and policy sciences.

## Bachelor of Arts Program

### Major Program

This bachelor of arts degree requires 120 units including at least 45 in the upper division. The University's writing, quantitative, and breadth requirements (WQB) must also be met (see "Writing, Quantitative, and Breadth Requirements" on page 7).

### Lower Division Requirements

Students complete all of  
HSCI 100-3 Human Biology (or BISC 101 and 102)  
HSCI 130-3 Foundations of Health Sciences

and one of

SA 101-4 Introduction to Anthropology

SA 150-4 Introduction to Sociology

and at least one additional HSCI 100 division course

and one of

STAT 201-3 Statistics for the Life Sciences

STAT 203-3 Introduction to Statistics for the Social

Sciences

and at least four of

HSCI 211-3 Perspectives on Cancer, Cardiovascular  
and Metabolic Diseases

HSCI 212-3 Perspectives on Infectious and  
Immunological Diseases

HSCI 214-3 Perspectives on Mental Health and  
Illness

HSCI 215-3 Perspectives on Disability and Injury  
HSCI 216-3 Ecological Determinants of Human Growth, Development and Health

### Upper Division Requirements

Students complete all of  
HSCI 304-3 Perspectives on Environmental Health  
HSCI 305-3 The Canadian Health System  
HSCI 307-3 Research Methods in Health Sciences  
HSCI 330-3 Exploratory Strategies in Epidemiology  
HSCI 340-3 Social Determinants of Health  
STAT 302-3 Analysis of Experimental and Observational Data

and one of  
HSCI 319-3 Perspectives on Behavioral Risks  
HSCI 401-3 Health Promotion: Individuals and Communities

and one of  
HSCI 319-3 Applied Health Ethics  
PHIL 319-3 Applied Health Ethics

and one of  
HSCI 481-3 Senior Seminar in Social Health Science  
HSCI 482-3 Senior Seminar in Infectious Diseases  
HSCI 483-3 Senior Seminar in Environmental Health  
HSCI 484-3 Senior Seminar in Population Health Research  
HSCI 485-3 Senior Seminar in Mental Health and Addictions  
HSCI 486-3 Senior Seminar in Global Health

plus a minimum of six additional upper division courses related to the major, including at least 12 HSCI units.

### Honors Program

A 3.0 cumulative grade point average (CGPA) and a 3.0 upper division grade point average (GPA) is required for entry and must be maintained to graduate. Students must complete at least 132 units and meet all the requirements for the major program.

Also required is an honors thesis, based on independent research under the direction of a faculty member. Students will complete all of  
HSCI 490-5 Research Proposal  
HSCI 491-5 Independent Research  
HSCI 492-5 Honors Research Thesis

Students who obtain both a program and graduation GPA of 3.5 are eligible for the designation *first class*.

### Bachelor of Science Program

This program incorporates basic science courses (biology, chemistry, molecular biology and statistics) with courses about health and disease from the health sciences core. Building on a solid base of basic biomedical and applied health science, students will receive advanced training in pharmacology, toxicology, pathophysiology and epidemiology, as well as molecular biology and genetics.

Within the BSc program, students choose from three areas of emphasis: general studies; environmental and occupational health; or infectious diseases. Each includes a solid basis in the biomedical sciences.

### Major Program

This bachelor of science degree requires 120 units of required and elective courses, prerequisites, plus other electives to meet the University's writing, quantitative and breadth (WQB) requirements (see "Writing, Quantitative, and Breadth Requirements" on page 7).

The general studies area of emphasis requires a minimum of 41 units of upper division courses. The environmental and occupational health area of emphasis requires 48 upper division units, while the infectious diseases area of emphasis requires 46 upper division units.

### Lower Division Requirements

Students complete all of  
BISC 101-4 General Biology I  
BISC 102-4 General Biology II  
BISC 202-3 Genetics  
CHEM 121-4 General Chemistry and Laboratory I  
CHEM 122-2 General Chemistry II  
CHEM 281-4 Organic Chemistry I  
CHEM 282-2 Organic Chemistry II  
HSCI 130-3 Foundations of Health Science  
MBB 222-3 Biochemistry and Molecular Biology  
MBB 231-3 Cellular Biology and Biochemistry

#### Recommended Electives

KIN 105-3 Fundamentals of Human Structure and Function  
KIN 142-3 Introduction to Kinesiology  
MATH 154-3 Calculus I for the Biological Sciences  
PHYS 101-3 Physics for the Life Sciences I  
PSYC X99W-3 Brain, Mind and Society

Additional lower division courses are required for each of the three BSc areas of emphasis below.

### Upper Division Requirements

Students complete all of  
HSCI 305-3 The Canadian Health System  
HSCI 321-3 Human Pathophysiology  
HSCI 324-3 Human Population Genetics and Evolution  
HSCI 330-3 Exploratory Strategies in Epidemiology  
MBB 331-3 Molecular Biology

and one of  
HSCI 319-3 Applied Health Ethics  
PHIL 319-3 Applied Health Ethics

Additional upper division courses are required for each of the three BSc areas of emphasis as listed below.

### General Studies Area of Emphasis

In addition to the lower and upper division requirements, the following courses are required.

#### Lower Division Requirements

Students complete at least three of  
HSCI 211-3 Perspectives on Cancer, Cardiovascular and Metabolic Diseases  
HSCI 212-3 Perspectives on Infectious and Immunological Diseases  
HSCI 214-3 Perspectives on Mental Health and Illness  
HSCI 215-3 Perspectives on Disability and Injury  
HSCI 216-3 Ecological Determinants of Human Growth, Development and Health

and one of  
STAT 201-3 Statistics for the Life Sciences  
STAT 203-3 Introduction to Statistics for the Social Sciences

#### Upper Division Requirements

Students complete  
STAT 302-3 Analysis of Experimental and Observational Data

and at least one of the following sets

either all of  
HSCI 310-3 Techniques for Population Health Research  
HSCI 422-3 Diffusion Pathways in the Spread of Disease  
HSCI 424-3 Strategic Applications of GIS in Health

or all of  
BISC 303-4 Microbiology  
HSCI 426-3 Immune System I: Basis of Innate and Adaptive Immunity  
MBB 308-3 Molecular Biology and Biochemistry Lab I

or all of  
HSCI 304-3 Perspectives on Environmental Health  
HSCI 323-3 Principles of Pharmacology and Toxicology  
HSCI 476-3 Seminar in Molecular Basis of Drug Action and Environmental Exposure

and at least one of  
HSCI 427-3 Immune System II: Immune Responses in Health and Disease  
HSCI 432-3 Infectious Disease Epidemiology  
HSCI 474-3 Seminar in Neuropharmacology  
HSCI 475-3 Seminar in Molecular Mechanisms of Epigenetics  
HSCI 476-3 Seminar in Molecular Basis of Drug Action and Environmental Exposure  
HSCI 477-3 Seminar in Vaccine Immunology  
HSCI 478-3 Seminar in Molecular Epidemiology of Infectious Diseases  
HSCI 482-3 Senior Seminar in Infectious Diseases  
HSCI 483-3 Senior Seminar in Environmental Health  
HSCI 484-3 Senior Seminar in Population Health Research

In addition, students must also complete a minimum of two additional upper division HSCI courses that will total a minimum of six units.

### Environmental and Occupational Health Area of Emphasis

In addition to the lower and upper division requirements, the following courses are required for students pursuing this area of emphasis.

#### Lower Division Requirements

Students complete all of  
HSCI 211-3 Perspectives on Cancer, Cardiovascular and Metabolic Diseases  
HSCI 216-3 Ecological Determinants of Human Growth, Development and Health  
STAT 201-3 Statistics for the Life Sciences

and one of  
HSCI 212-3 Perspectives on Infectious and Immunological Diseases  
HSCI 214-3 Perspectives on Mental Health and Illness  
HSCI 215-3 Perspectives on Disability and Injury

#### Upper Division Requirements

Students complete all of  
BISC 313-3 Environmental Toxicology II  
HSCI 304-3 Perspectives on Environmental Health  
HSCI 323-3 Principles of Pharmacology and Toxicology  
HSCI 443-4 Environmental Health Toxicology Lab  
MBB 308-3 Molecular Biology and Biochemistry Lab  
STAT 302-3 Analysis of Experimental and Observational data

and at least one of  
HSCI 474-3 Seminar in Neuropharmacology  
HSCI 475-3 Seminar in Molecular Mechanisms of Epigenetics  
HSCI 476-3 Seminar in Molecular Basis of Drug Action and Environmental Exposure  
HSCI 483-3 Senior Seminar in Environmental Health

In addition, students must also complete a minimum of three additional upper division HSCI units as electives.

### Infectious Diseases Area of Emphasis

In addition to the lower and upper division requirements, the following courses are required for students pursuing this area of emphasis.

#### Lower Division Requirements

Students complete all of  
HSCI 212-3 Perspectives on Infectious and Immunological Diseases  
HSCI 216-3 Ecological Determinants of Human Growth, Development and Health  
STAT 201-3 Statistics for the Life Sciences

and one of  
HSCI 211-3 Perspectives on Cancer, Cardiovascular and Metabolic Diseases  
HSCI 214-3 Perspectives on Mental Health and Illness  
HSCI 215-3 Perspectives on Disability and Injury

**Upper Division Requirements**

Students complete all of  
 BISC 303-4 Microbiology  
 HSCI 426-3 Immune System I: Basis of Innate and Adaptive Immunity  
 HSCI 438-3 Animal Virology  
 MBB 308-3 Molecular Biology and Biochemistry Lab I  
 STAT 302-3 Analysis of Experimental and Observational Data

and at least one of

HSCI 441-4 Virology Laboratory  
 HSCI 442-4 Immunology Laboratory

and at least one of

HSCI 427-3 Immune System II: Immune Responses in Health and Disease  
 HSCI 432-3 Infectious Disease Epidemiology  
 HSCI 439-3 Pathogenesis of Human and Animal Viral Infectious Diseases  
 HSCI 477-3 Seminar in Vaccine Immunology

HSCI 478-3 Seminar in Molecular Epidemiology of Infectious Diseases  
 HSCI 482-3 Senior Seminar in Infectious Diseases

In addition, students must also complete a minimum of three additional upper division HSCI units as electives.

**Honors Program**

A 3.0 cumulative grade point average (CGPA) and a 3.0 upper division grade point average (GPA) is required for entry and must be maintained for graduation. Students must complete at least 132 units and meet all the requirements for the major program.

Also required is an honors thesis, based on independent research under the direction of a faculty member. Students will complete all of  
 HSCI 490-5 Research Proposal  
 HSCI 491-5 Independent Research  
 HSCI 492-5 Honors Research Thesis

Students who obtain both a program and graduation GPA of 3.5 are eligible for the designation *first class*.

**Minor Program**

Students complete at least four of  
 HSCI 211-4 Perspectives on Cancer, Cardiovascular, and Metabolic Diseases  
 HSCI 212-4 Perspectives on Infectious and Immunological Diseases  
 HSCI 214-4 Perspectives on Mental Health and Illness  
 HSCI 215-4 Perspectives on Disability and Injury  
 HSCI 216-4 Ecological Determinants of Human Growth, Development and Health

Students must also complete at least 15 upper division HSCI units.

**Co-operative Education**

This program integrates work experience with academic study. For information see "Co-operative Education" on page 212.

# Faculty of Science

P9309 Shrum Science Centre, 778.782.4590 Tel,  
778.782.3424 Fax, [www.sfu.ca/~science](http://www.sfu.ca/~science)

## Dean

M. Plischke BSc (Montr), MPhil (Yale), PhD (Yeshiva)

## Associate Dean

R.W. Mathewes BSc (S Fraser), PhD (Br Col)

For research interests of faculty members, see  
"Faculty of Science" on page 300.

## Undergraduate Degrees Offered

bachelor of science (honors)  
bachelor of science

## Diplomas and Certificates Offered

certificate in actuarial mathematics  
certificate in earth sciences  
certificate in forestry geoscience  
certificate in health and fitness studies  
certificate in applied human nutrition  
post baccalaureate diploma in biological sciences  
post baccalaureate diploma in kinesiology

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information.

## Major Program

This program provides a broad education in several fields and some specialization in one field known as the major. Optional programs, including double majors or majors and minors, are possible. General regulations are in Faculty of Science requirements for the BSc (major). For specific requirements, see the academic department concerned. Students not pursuing a specialization may undertake a general science program. See "General Science Program" on page 194. For information, see [www.sfu.ca/ugcr](http://www.sfu.ca/ugcr).

## Requirements for Major

Students complete 120 units including

- minimum of 28 units at the 300 and 400 division as specified by the major program
- additional upper division units to total a minimum of 44 upper division units (excluding EDUC 401, 407)
- all undergraduate students enrolling in September 2006 and thereafter must fulfil the new curriculum writing, quantitative, and breadth requirements
- a minimum program 2.00 cumulative grade point average (CGPA) must be obtained on the overall major program requirements, as well as a minimum program 2.00 grade point average in the upper division major courses. (See "Grade Point Averages Needed for Graduation" on page 31 regarding graduation GPA requirements on all course work completed at Simon Fraser University.)

Additional requirements, as specified by the major program and in *General Information*, may be required and

## For students enrolled beginning fall 1991 or later

- upper division GPA and CGPA as specified in the *General Information* section of this Calendar

or

## For students enrolled before fall 1991

- a graduation GPA of 2.00 calculated on the required 120 units, or on the last 60 units completed including the 44 units of upper division credit
- a 2.00 GPA in the required upper division courses

## For students enrolled before fall 2006

- a minimum of 12 units in subjects completed outside the Faculty of Science (excluding EDUC 401 to 407) including six units minimum completed in the Faculty of Arts and Social Sciences are required

## Honors Program

This program provides in-depth study in a single field and requires the student to concentrate his/her studies in the fifth to eighth levels in the chosen field. It is recommended for those intending to proceed to advanced degrees provided they meet the entrance requirements and maintain the required standing.

Students applying for honors program admission will normally have a cumulative grade point average of 3.00 (B standing) and are expected to maintain this standard to continue in the honors program.

## Requirements for Honors and Honors First Class

- Students complete 132 units including
- a minimum of 48 upper division units in one subject area
  - additional upper division units to total to a minimum of 60 units of upper division credit
  - all undergraduate students enrolling in September 2006 and thereafter must fulfil the new curriculum writing, quantitative and breadth requirements
  - a program 3.00 CGPA minimum must be obtained on the overall honors requirements, as well as a minimum program GPA of 3.00 in the upper division required honors program courses. (See "Student Appeals" on page 32 of the *General Regulations* section regarding graduation GPA requirements on all course work completed at Simon Fraser University.) Honors students who obtain both a program and a graduation minimum GPA of 3.5 are eligible for the designation 'first class.'

Students must also complete additional requirements as specified by the honors and in the section called "Honors Program" on page 6.

## Program Guidelines

- At the outset, students are requested to indicate their intended major to facilitate counselling.
- Students who have not determined a major or intend to transfer to a professional school (i.e., medicine, dentistry, etc.) should seek advice from Student Services or the Office of the Dean of Science.
- Declaration of major or honors must be officially accepted by that department, prior to the completion of 60 units.
- New students intending to complete more than 15 units in their first term should seek advice from Student Services, the Office of the Dean of Science or their major department.
- Normally, the graduation requirements, as published in the Calendar at the time of formal declaration of major or honors, will apply.
- In any combination of science programs (honors/minor, major/major, major/minor, minor/minor) the same upper division course may not be used for both programs. One course might fulfil content requirements of two related areas, but in such a case additional replacement units in upper division work satisfactory to one of the departments

or program committees must be completed in one of the subjects to fulfil overall credit for the two programs.

- Programs totalling more than 18 units per term require the approval of the dean.

## Minor Program

Consult advisors in appropriate departments for course selection. Suggested programs and prerequisites are shown in each department's section. An average 2.00 grade is required in those upper division courses used to satisfy the requirements for a minor.

## General Science Program

This program, consisting of 120 units, provides a broad education in several fields with some specialization in at least two. It requires two minors, one of which must be chosen from within the Faculty of Science. The groupings of courses from which the two minors can be chosen are given under the *General Science Program* section (page 194), along with the general course requirements for this degree. It should be noted that all lower division requirements for the two chosen minors must also be completed.

## Co-operative Education

These programs are available in all programs including biological sciences, chemistry, earth sciences, environmental science, geography, mathematics, molecular biology and biochemistry, physics, and statistics and actuarial science. Details are given in the departmental sections and in "Co-operative Education" on page 212. Students are encouraged to complete the co-op option.

## Withdrawal of Program Approval

A student whose progress, in the judgment of the department, is below the standard for graduation from a program may be refused entry to, or required to withdraw from, that program in the department.

## Transfer Credit and Bachelor of Science Degrees for Students Who Successfully Complete First Year Medical Science Professional Training

Students who complete at least 90 units in a science degree program and are accepted into an accredited professional program in medicine, dentistry, optometry or veterinary medicine are eligible for a Simon Fraser University bachelor of science degree after successful completion of the first professional study year. To be acceptable, courses completed in the professional program must not duplicate those already completed at Simon Fraser University and must be acceptable for transfer credit in a major or honors program. Candidates must apply for transfer credit and a bachelor's degree through Simon Fraser University. Since official transcripts of the work completed in the first year of the professional program are required for transfer credit, application for graduation should be delayed until the summer term following the completion of requirements.

**Faculty of Dentistry at the University of British Columbia requires the following courses which are prerequisites for applying to enter the first year of dentistry (DMD).**

ENGL 199 and one of 101 or 102 or 103 or 104 or 105  
MBB 222 and 321  
BISC 101 and 102

CHEM 121, 122, 126, 281, 282, 286

MATH 154 and 155, or 157 and 158, or 151 and 152  
PHYS (101, 102, 130) or (120, 121, 131) or (125, 126, 131) or (140, 141)

Additional courses are required to complete six terms (90 UBC units) and should be chosen in accordance with a specific Simon Fraser University degree program but students are advised to select some courses from humanities and social sciences.

**Contact address**

For student admissions: Faculty of Dentistry – Student Services, University of British Columbia, 278 – 2199 Wesbrook Mall, Vancouver, BC, V6T 1Z3. Telephone 604.822.8063, Fax 604.822-8279, fodadms@interchange.ubc.ca, www.dentistry.ubc.ca

**Faculty of Forestry at the University of BC**

The Faculty of Forestry offers four-year bachelor of science degree programs in: Forest Sciences, Natural Resources Conservation, Wood Products Processing, Forest Operations and Forest Resources Management. The curricula allows students to enter the programs directly from high school, or following a year of science at the University of BC, or its equivalent at another post-secondary institution. If first year science at Simon Fraser University, the following courses are recommended.

ENGL one of 101 or 102 or 103 or 105 or 199

BISC 101 and 102

CHEM 111 and 121 or PHYS 100 or 101

MATH 154 and 155, or 157 and 158, or 151 and 152  
ECON 103 and 105

STAT 270

Students are encouraged to contact the Faculty of Forestry's advisors for more detailed information:

Student Services, Faculty of Forestry, University of British Columbia, Forest Science Centre, FSC 2609, 2424 Main Mall, Vancouver, BC, V6T 1Z4 Telephone 604.827.5195, toll free 1.888.933.9663, advising@forestry.ubc.ca, www.forestry.ubc.ca

**Faculty of Medicine at the University of British Columbia requires the following courses which are prerequisites for applying to enter the first year of medicine.**

English: any **two** of ENGL 101, 102, 103, 104, 105, 199 (199 recommended)

Chemistry: all of CHEM 121, 122, 126, 281, 282, 286  
Biochemistry: both MBB 222 and 321 (MBB 222 is a prerequisite for MBB 231; MBB 231 is a prerequisite for MBB 321)

Biology: both of BISC 101 and 102

Final authority regarding course equivalency rests with academic advisors in the Faculty of medicine and is only available after the application has been submitted and evaluated by an academic advisor.

Official admission requirements are defined in the UBC Calendar and may be subject to change. For information refer to [www.med.ubc.ca/admissionsmd/](http://www.med.ubc.ca/admissionsmd/)

**Contact address**

Admissions office: Faculty of Medicine, University of British Columbia, 317 – 2194 Health Sciences Mall, Vancouver, BC, V6T 1Z3. Telephone 604.822.4482, admissions.md@ubc.ca, www.med.ubc.ca

**Faculty of Pharmaceutical Sciences at the University of British Columbia requires the following courses which are prerequisites for**

**applying to enter the first year of a four year program of pharmacy.**

BISC 101 and 102

CHEM 121 / 122 / 126

ENGL any **two** of ENGL 199, 101, 102, 103, 104, 105  
MATH 151 / 152 (or 154 / 155 or 157 / 158)

PHYS (101, 102, 130) or (120, 121, 131) or (125, 126, 131) or (140, 141)

Refer to a current University of British Columbia Calendar for specific information. All applicants must submit additional supplemental admission requirements. Students should consult the Faculty of Pharmaceutical Sciences at the University of BC.

**Contact address**

Admissions, Enrolment Services, University of BC, 2016 – 1874 East Mall, Vancouver, BC, V6T 1Z1. Telephone 604.822.3014, www.pharmacy.ubc.ca

**Western College of Veterinary Medicine at the University of Saskatchewan, Saskatoon, requires the following courses as prerequisites for applying to enter this program.**

ENGL any **two** of 101, 102, 103 or 104

MBB 222 and 231

BISC 101, 102, 202, 303

CHEM 121, 122, 126, 281, 282, 286

MATH 151, 152 (or 154, 155 or 157, 158) STAT 201

may be substituted for MATH 152, or 155 or 158

PHYS (101, 102, 130) or (120, 121, 131) or (125, 126, 131) or (140, 141)

Electives 15 units

Electives should be based on the program in which the student is enrolled, and may include non-science related subjects. Students are encouraged to choose electives that broaden perspectives. The electives should not include courses which are equivalent to BC high school grade 12, or which are general education courses at the 000 division.

**Contact address**

Admission Office, Western College of Veterinary Medicine, University of Saskatchewan, 52 Campus Drive, Saskatoon, Saskatchewan, S7N 5B4

**General Note**

All course requirements should be completed by the end of the spring term preceding the proposed date of entry to a professional school.

The Western College of Veterinary Medicine requires a minimum 70% cumulative average for veterinary program admission. Grades are converted to a common scale for comparative purposes and this converted average will be used.

The college has recently, with Saskatchewan Human Rights Commission approval, introduced an Educational Equity Program for Aboriginal students. A defined number of seats have been allocated for self-identified Aboriginal descent applicants who will be ranked among themselves and not against the general applicant pool. Proof of Aboriginal ancestry is required and must be provided at the time of application. For the purpose of admission the accepted documents for Aboriginal ancestry proof are in the University of Saskatchewan Calendar.

**Breadth-Science Courses for Non-specialists**

The following courses may be completed to fulfill science Breadth requirements. They are specifically designed for those not specializing in pure or applied science and will introduce historical and contemporary perspectives on various scientific disciplines.

BISC 110-3 The Evolution and Diversity of Life on Earth

BISC 111-3 ST: Current Topics in Biology I

BISC 112-3 ST: Current Topics in Biology II  
CHEM 191-3 Living in a Materials World: From the Stone Age to Nanoscience

CHEM 192-3 Chemistry in Your Home, Work and Environment

CHEM 193-3 Close Encounters of the Radioactive Kind

EASC 103-3 The Rise and fall of the Dinosaurs

EASC 104-3 Geohazards: The Earth in Turmoil

EASC 106-3 Earth Through Time

MATH 160-3 Mathematics in Action

MATH 178-3 Fractals and Chaos

MBB 310-3 Genes, Biotechnology and Society

PHYS 190-3 Introduction to Astronomy

PHYS 192-3 Logarithm and Blues

SCI 300-3 Science and Its Impact on Society

STAT 100-3 Chance and Data Analysis

## Behavioral Neuroscience Program

*Department of Biomedical Physiology and Kinesiology*

K9625, 778.782.3573 Tel, 778.782.3040 Fax, kin\_advisor@sfu.ca, www.neuroscience.sfu.ca

*Department of Psychology*

5246 Robert C. Brown Hall, psyc-advisor@sfu.ca 778.782.3354 Tel, 778.782.3427 Fax

*Director*

M. Liotti MD (Naples), PhD (Parma)

The Department of Psychology and the Department of Biomedical Physiology and Kinesiology co-operate to offer this major and honors program leading to a bachelor of science or bachelor of science (honors) in the Faculty of Arts and Social Sciences or the Faculty of Science. The program is administered by a co-ordinating committee of two members each from the Department of Psychology and the Department of Biomedical Physiology and Kinesiology. The committee chair, who serves as program director, is appointed from either of the two departments, alternating every two years.

## Admission

The admission requirements for the three possible entry routes appear below.

### High School Admission

Students pursuing this major via the Faculty of Arts and Social Sciences will satisfy the faculty's general admission requirements. Students seeking Faculty of Science admission to this major will satisfy the same admission requirements as students seeking admission into the Department of Biomedical Physiology and Kinesiology.

### Post Secondary Transfer and Internal Transfer Applicants

Post-secondary transfer applicants may apply after at least 18 Simon Fraser University units are completed. Post-secondary transfer and internal transfer applicants are required to achieve a 2.5 cumulative grade point average (CGPA) for admission.

As well, applicants must have completed the following courses with a grade of C or better.

BISC 101-4 General Biology

CHEM 121-4 General Chemistry and Laboratory I

KIN 142-3 Introduction to Kinesiology

PSYC 100-3 Introduction to Psychology I

PSYC 102-3 Introduction to Psychology II

PSYC 201W-4 Introduction to Research Methods in Psychology

PSYC 210-4 Introduction to Data Analysis in Psychology

and one of  
MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences

and one of  
PHYS 101-3 Physics for the Life Sciences I  
PHYS 120-3 Mechanics and Modern Physics  
PHYS 140-4 Studio Physics – Mechanics and Modern Physics

### Program Continuation

Students must maintain a 2.5 cumulative grade point average to remain in the program, and obtain a C grade or higher in all required courses.

### Major Program

This program requires 120 units: 60 required lower division, plus 45 upper division units including 42 required upper division units plus three upper division Simon Fraser University elective units, plus six units designated Breadth-Humanities; plus nine lower or upper division Simon Fraser University elective units.

### Lower Division Requirements

Students complete all of the following 60 units.

#### Biology

BISC 101-4 General Biology  
MBB 221-3 Cellular Biology and Biochemistry

#### Chemistry

CHEM 121-4 General Chemistry and Laboratory I  
CHEM 122-2 General Chemistry II  
CHEM 281-4 Organic Chemistry I

#### Kinesiology

KIN 142-3 Introduction to Kinesiology  
KIN 205-3 Introduction to Human Physiology  
KIN 207-3 Human Motor Systems

#### Mathematics

MATH 154-3 Calculus for the Biological Sciences  
MATH 155-3 Calculus II for the Biological Sciences

#### Physics

PHYS 101-3 Physics for the Life Sciences I  
PHYS 102-3 Physics for the Life Sciences II  
PHYS 130-2 Physics for the Life Sciences Laboratory

#### Psychology

PSYC 100-3 Introduction to Psychology I  
PSYC 102-3 Introduction to Psychology II  
PSYC 201W-4 Introduction to Research Methods in Psychology  
PSYC 210-4 Introduction to Data Analysis in Psychology  
PSYC 221-3 Introduction to Cognitive Psychology  
PSYC 280-3 Introduction to Biological Psychology

### Upper Division Requirements

Students complete a total of 45 units including 42 required units as shown below.

#### Kinesiology

Students complete 21 units including these 12 units.  
KIN 305-3 Human Physiology I  
KIN 306-3 Human Physiology II (Principles of Physiological Regulation)  
KIN 324-3 Principles of Human Anatomy  
KIN 426-3 Neuromuscular Anatomy

plus nine additional units selected from the following.

KIN 336-3 Histology  
KIN 407-3 Human Physiology Laboratory  
KIN 415-3 Neural Control of Movement  
KIN 416-3 Control of Limb Mechanics  
KIN 446-3 Neurological Disorders  
KIN 448-3 Rehabilitation of Movement Control  
KIN 461-3 Physiological Aspects of Aging  
KIN 467-3 Human Motor Control

#### Psychology

Students complete 21 units including these 12 units.  
PSYC 300W-3 Critical Analysis of Issues in Psychology  
PSYC 381-3 Behavioral Endocrinology  
PSYC 382-3 Cognitive Neuroscience  
PSYC 388-3 Biological Rhythms and Sleep

plus nine additional units selected from the following.

PSYC 303-3 Perception  
PSYC 330-3 Attention  
PSYC 335-3 Sensation  
PSYC 383-3 Psychopharmacology  
PSYC 384-3 Developmental Psychobiology  
PSYC 386-4 Laboratory in Behavioral Neuroscience  
PSYC 387-3 Human Neuropsychology  
PSYC 480-4 Selected Topics in Biological Psychology I  
PSYC 482-4 Selected Topics in Biological Psychology II  
PSYC 491-3 Selected Topics in Psychology  
PSYC 493-3 Directed Studies  
PSYC 494-3 Directed Studies  
PSYC 495-3 Directed Studies  
plus three upper division elective units.

### Breadth, Quantitative and Writing Intensive Requirements

A minimum of six units of designated humanities breadth (B-Hum) courses must be completed. The social sciences breadth (B-Soc), science breadth (B-Sci), undesignated breadth (UB) and quantitative (Q) requirements are satisfied through completion of the behavioral neuroscience lower division required courses so no additional course work is required. As well, the writing intensive requirement is satisfied by the completion of required courses PSYC 201W and 300 W. For more information, see [www.sfu.ca/ugcr](http://www.sfu.ca/ugcr).

### Honors Program

This program is for behavioral neuroscience major students who wish to pursue advanced study.

### Admission Requirements

To apply for admission, students must have completed a minimum of 60 units in the behavioral neuroscience major program with a minimum 3.00 cumulative grade point average (CGPA). Applicants complete a program approval form that is available at [www.neuroscience.sfu.ca](http://www.neuroscience.sfu.ca) and submit this, together with a recent unofficial transcript, to the chair of the behavioral neuroscience co-ordinating committee.

### Graduation Requirements

A minimum of 132 units is required consisting of the major program requirements (see above) plus one of KIN 457-3 Behavioral Neuroscience Undergraduate Honors Thesis Proposal  
PSYC 457-3 Behavioral Neuroscience Undergraduate Honors Thesis Proposal

and one of

KIN 459-9 Behavioral Neuroscience Undergraduate Honors Thesis  
PSYC 459-9 Behavioral Neuroscience Undergraduate Honors Thesis

At least 60 upper division units including 50 in upper division psychology and kinesiology are required with the following CGPAs: an overall University CGPA of 3.00; an overall upper division CGPA of 3.00; an overall behavioral neuroscience CGPA of 3.0 calculated on lower and upper division requirements; an upper division behavioral neuroscience CGPA of 3.00 calculated on upper division requirements.

## Department of Biological Sciences

B8255 Shrum Science Centre, 778.782.4475 Tel,  
778.782.3496 Fax, [www.sfu.ca/biology](http://www.sfu.ca/biology)

#### Chair

F. Breden BA (S Florida), MS (Georgia), PhD (Chic)

#### Professors Emeriti

L.J. Albright BSc (McG), MSc, PhD (Oregon)  
A.T. Beckenbach BSc (Florida Presbyterian), MSc (Flor), PhD (Calif)  
J.H. Borden BSc (Wash State), MSc, PhD (Calif), RPF, RPE, FESC  
F. Cooke BA, MA, PhD (Camb)  
L.M. Dill BSc, MSc, PhD (Br Col), Burnaby Mountain Endowed Professor  
L.D. Druehl BSc (Wash State), MSc (Wash), PhD (Br Col)  
T. Finlayson BA (Tor), LLD (S Fraser)  
F.J.F. Fisher BSc, MSc (Cant), PhD (NZ)  
J.P.M. Mackauer DrPhilNat (Fran), FESC  
B.A. McKeown BSc (Br Col), PhD (S Fraser)  
J.E. Rahe BSA, PhD (Purdue)  
L.M. Srivastava BSc, MSc (Alld), PhD (Calif)  
A.L. Turnbull BSF, MF (Br Col), DPhil (Oxf)  
N.A.M. Verbeek BSc (Br Col), MSc (Montr), PhD (Calif)  
W.E. Vidaver AB (San Francisco), PhD (Stan)  
J.M. Webster BSc, DSc, PhD (Lond), ARCS, DIC

#### Professors

L.I. Bendell-Young BSc, PhD (Tor)  
F. Breden BA (S Florida), MS (Georgia), PhD (Chic)  
I.M. Coté BSc (McG), MSc (Alta), PhD (Tor)  
B.J. Crespi BSc (Chic), PhD (Mich)  
G.J. Gries Diplom, PhD (Gött), NSERC Industrial Research Chair  
N.H. Haunerland Diplom, PhD (Mün)  
H. Hutter BSc (LMaximilians), PhD (Planck)  
C.J. Kennedy BSc, PhD (S Fraser)  
F.C.P. Law BSc, MSc (Alta), PhD (Mich)  
L.F.W. Lesack BSc (Man), PhD (Calif)\*  
R.W. Mathewes BSc (S Fraser), PhD (Br Col)  
M.M. Moore BSc, PhD (Br Col)  
Z.K. Punja BSc (Br Col), MS, PhD (Calif), Burnaby Mountain Endowed Chair  
J.D. Reynolds BSc (Tor), MSc (Qu), PhD (Tor), Tom Buell BC Leadership Chair in Salmon Conservation and Management  
B.D. Roitberg BSc (S Fraser), MSc (Br Col), PhD (Mass)  
T.D. Williams BSc (Exe), PhD (Brist)  
M.L. Winston BA, MA (Boston), PhD (Kansas)  
R.C. Ydenberg BSc (S Fraser), DPhil (Oxf)

#### Associate Professors

J. Cory BSc (Sheff), PhD (Oxf), Thelma Finlayson Professorship in Biological Control  
N.K. Dulvy (Birm), PhD (E Anglia), Canada Research Chair  
E. Elle BSc, MA (New York), PhD (Rutgers)  
D.J. Green BSc (Sus), MSc (S Fraser), PhD (ANU)  
M.W. Hart BSc (Alta), MSc (Dal), PhD (Wash)  
C.A. Lowenberger BSc (Guelph), MPM (S Fraser), PhD (McGill), Canada Research Chair  
J. Mattsson BSc, PhD (Uppsala)  
R.A. Nicholson BSc, PhD (S'ton)  
A.O. Mooers BSc, PhD (Oxf)  
I. Novales Flamarique BSc (McG), MSc, PhD (Vic, BC)

#### Assistant Professors

S.R. Bisgrove BSc (Vic, BC), MSc (Indiana), PhD (Utah)  
J.K. Christians BSc (Trent), PhD (S Fraser)  
PhD (McG), Canada Research Chair  
J. Guttman (BSc) WOnt), MSc (Br Col)  
W. Palen BA (Virginia), PhD (Wash), Canada Research Chair

E. Palsson, CandMag (Oslo), MA, PhD (Princ)  
G.L. Rintoul BSc (W Ont), PhD (Br Col)  
M.A. Silverman, BSc (N Illinois) PhD (Denver)

#### Adjunct Professors

D. Bertram BSc (Vic, BC), MSc (S Fraser),  
PhD (McG)  
C. Bishop BSc (Guelph), MSc (York, Can),  
PhD (McM)  
W.S. Boyd BSc (Dal), MSc (Br Col), PhD (S Fraser)  
R.W. Butler BSc, MSc (S Fraser), PhD (Br Col)  
C. Eichkoff BSc (Br Col), MSc, PhD (S Fraser)  
J. Elliot BSc, MSc (Ott), PhD (Br Col)  
D. Esler BSc (Northland), MSc (Texas A&M),  
PhD (Oregon State)  
P. Gallagher BSc (Br Col), BEd, PhD (S Fraser)  
D. Gillespie BSc, MSc, PhD (S Fraser)  
M. Goettel BSc (C'dia), MSc (Ott), PhD (Alta)  
M. Hipfner BSc (Guelph), MSc (Ott), PhD (Nfld)  
D.B. Lank BS (Marl), MS (Minn), PhD (Cornell)  
D. McQueen BSc, MSc, PhD (Br Col)  
B. Smith BSc (New Br), MSc (Dal), PhD (Br Col)

#### Associate Members

T. Beischlag, Faculty of Health Sciences  
B. Brandhorst, Department of Molecular Biology and  
Biochemistry  
F. Gobas, School of Resource and Environmental  
Management  
C. Krieger, Department of Biomedical Physiology and  
Kinesiology  
M. Nikura, Faculty of Health Sciences  
G. Prefontaine, Faculty of Health Sciences  
L.M. Quarmby, Department of Molecular Biology and  
Biochemistry  
R. Routledge, Department of Statistics and Actuarial  
Science  
P. Ruben, Department of Biomedical Physiology and  
Kinesiology  
G.F. Tibbits, Department of Biomedical Physiology  
and Kinesiology

#### Senior Lecturers

M. Fernando BSc (SLanka), MSc, PhD (Br Col)  
T. McMullan BSc, MPM (S Fraser)  
I. Mladenovic BSc, MSc, PhD (Belgrade)  
J. Sharp BA, BSc (McG), MSc (Br Col)  
C. Thong BSc (Sing), PhD (S Fraser)  
D.R. Wilson BSc, MSc (S Fraser)

#### Lecturers

E. Barley BSc, MSc (S Fraser)  
S.F. Briscoe BSc (W Laur), PhD (McG)\*\*  
K. Fitzpatrick MSc (Br Col), PhD (S Fraser)  
P. Hollmann BSc (Vic, BC), MSc (S Fraser)

#### Advisor

Ms. E. Kirkwood BSc (S Fraser), MBA (City  
University, Vancouver), undergraduate program  
advisor, B8270 Shrum Science Centre,  
778.782.3539, ekirkwoo@sfu.ca

\*joint appointment with geography

\*\*joint appointment with molecular biology and  
biochemistry

Programs offered include: major, honors, minor;  
environmental toxicology minor, post baccalaureate  
diploma. Co-operative education is available to  
students in major and honors programs.

### Academic Advising

Biological sciences majors should contact an advisor  
before enrolment.

### Field Schools

International field schools are offered in a range of  
areas, e.g. African studies, tropical biology or marine  
ecology. Students interested in completing field  
courses at an outside accredited institution for  
possible transfer credit should consult an advisor.

### Minimum Grade Requirement

A grade of C- or better is required on all prerequisite  
BISC and MBB courses.

### Prerequisites

Entry into courses numbered 300 and above normally  
requires completion of the lower division core in  
biological sciences. Prerequisites for any course may  
be waived with the approval of the department.

### Designated Breadth in Science Courses

Several BISC courses are available for non-majors to  
earn designated breadth in science (DB-Sci) credit.  
Included are BISC 101 and 102. These courses  
primarily deliver prerequisite information to BISC and  
science majors in related departments. Faculty of Arts  
and Social Sciences students are encouraged to earn  
their DB-Sci units in other BISC breadth courses (e.g.  
BISC 110, 111 and 112).

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil  
writing, quantitative and breadth requirements as part  
of their program. See "Writing, Quantitative, and  
Breadth Requirements" on page 7 for information.

### Major Program

All majors should complete the lower division core  
requirements within the first 60 units (four terms), and  
maintain a minimum 2.00 GPA in these courses. BISC  
majors are encouraged to choose their stream upon  
lower division core completion. Students who have  
had more than five course repeats are normally not  
permitted to remain in the program. Direct entry to the  
BISC major upon acceptance to the University is  
possible if Faculty of Science criteria is met.

Basic unit requirements underlying all areas of  
emphasis follow.

BISC/MBB (lower division)	20 units
non BISC/MBB (lower division)	27 units
BISC/MBB (upper division)	36 units
*electives	37 units
total (minimum)	120 units

\*see "Requirements for Major" on page 181

### Lower Division Core

Normally all biological sciences majors complete the  
following, or equivalents, within the first 60 units (four  
terms) of their programs.

### Courses in the Faculty of Science

Students complete all of  
BISC 101-4 Introduction to Biology  
BISC 102-4 Introduction to Biology  
BISC 202-3 Genetics  
BISC 204-3 Introduction to Ecology  
CHEM 121-4 General Chemistry and Laboratory I  
CHEM 122-2 General Chemistry II  
CHEM 281-4 Organic Chemistry and Laboratory I  
CHEM 282-2 Organic Chemistry II  
MBB 222-3 Molecular Biology and Biochemistry  
MBB 231-3 Cell Biology and Biochemistry  
STAT 201-3 Statistics for the Life Sciences

and one of

MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences

and one of

MATH 152-3 Calculus II  
MATH 155-3 Calculus II for the Biological Sciences

and one of

PHYS 101-3 Physics for the Life Sciences I  
PHYS 120-3 Mechanics and Modern Physics

PHYS 125-3 Mechanics and Special Relativity  
PHYS 140-4 Studio Physics – Mechanics and Modern  
Physics

and one of

PHYS 102-3 Physics for the Life Sciences II  
PHYS 121-3 Optics, Electricity and Magnetism  
PHYS 126-3 Electricity, Magnetism and Light  
PHYS 141-4 Studio Physics – Optics, Electricity and  
Magnetism

Students are encouraged to complete a full year of  
organic chemistry. Medical, dental or veterinary  
school applicants should include all CHEM courses  
above.

### Upper Division Requirements and Electives

All biological sciences majors will complete a  
minimum of 12 upper division BISC/MBB courses.  
The following two courses form an upper division core  
required by all BISC major/honors students.

BISC 300-3 Evolution  
BISC 333-3 Developmental Biology

All students must complete at least one physiology  
course from the following  
BISC 305-3 Animal Physiology  
BISC 366-3 Plant Physiology

and at least one organism lab course from the  
following

BISC 303-4 Microbiology  
BISC 306-4 Invertebrate Biology  
BISC 316-4 Vertebrate Biology  
BISC 317-3 Insect Biology  
BISC 326-3 Biology of Algae and Fungi  
BISC 337-4 Plant Biology  
BISC 416-4 Fish Biology  
BISC 418-3 Parasitology

Students should choose remaining requirements in an  
area of specialization. Four biology streams are  
offered: cell and molecular biology, integrative  
biology, ecology and evolution and an open stream.  
The open stream provides broad biological training, or  
may be used to specialize in an area not offered by  
the main streams (consult the undergraduate  
program advisor, individual faculty, or department  
website for advice on other areas of specialization).  
The course requirements for each stream are as  
follows.

### Cell and Molecular Biology

Students complete five stream specific courses from  
the following

BISC 302-3 Genetic Analysis  
BISC 303-4 Microbiology\*  
BISC 357-3 Gene Cloning\*  
BISC 403-3 Current Topics in Cell Biology\*  
BISC 405-3 Cell Physiology  
BISC 429-4 Separation Methods  
BISC 430-3 Plant Pathology  
BISC 439-4 Industrial Microbiology  
BISC 449-4 Histological Techniques in Biology  
BISC 457-3 Plant Molecular Biology and  
Biotechnology  
BISC 497W-3 Undergraduate Research: Writing  
Intensive  
BISC 498-3 Undergraduate Research I  
BISC 499-3 Undergraduate Research II  
MBB 308-3 Molecular Biology and Biochemistry  
Laboratory I  
MBB 322-3 Molecular Physiology\*  
MBB 331-3 Molecular Biology\*

\*recommended

plus three electives (nine units) chosen from any  
upper division undergraduate BISC, MASC or special  
topics courses appropriate for the selected stream, or  
alternative courses (e.g. MBB, KIN) as approved by  
the program advisor.



Students complete a total of five lab courses (which may include one of BISC 497W, 498, 499) among their upper division courses.

### Integrative Physiology

Students complete one of the following lab courses  
BISC 307-3 Animal Physiology Lab  
BISC 367-3 Plant Physiology Lab

plus four stream specific courses from the following  
BISC 312-3 Environmental Toxicology I  
BISC 313-3 Environmental Toxicology II  
BISC 405-3 Cell Physiology  
BISC 432-3 Chemical Pesticides and the Environment  
BISC 439-4 Industrial Microbiology  
BISC 445-3 Environmental Physiology of Animals  
BISC 455-3 Endocrinology  
BISC 497W-3 Undergraduate Research: Writing Intensive  
BISC 498-3 Undergraduate Research I  
BISC 499-3 Undergraduate Research II  
MBB 321-3 Intermediary Metabolism\*  
MBB 322-3 Molecular Physiology\*

\*recommended

plus three elective courses (nine units) chosen from any upper division undergraduate BISC or MASC course or special topics courses appropriate for the selected stream, or alternative courses (e.g. MBB, KIN) as approved by the program advisor.

Students complete a total of five lab courses (which may include one of BISC 497W, 498, 499) among their upper division courses.

### Ecology and Evolution

Students complete at least one of

BISC 304-3 Animal Ecology  
BISC 404-3 Plant Ecology

plus four stream specific courses from the following  
BISC 310-3 Natural History of British Columbia  
BISC 406-3 Marine Biology and Oceanography  
BISC 407-3 Population Dynamics  
BISC 410-3 Behavioral Ecology  
BISC 411-3 Behavioral Ecology Laboratory  
BISC 414-3 Limnology  
BISC 419-3 Wildlife Biology  
BISC 422-3 Population Genetics  
BISC 434-3 Paleocology and Palynology  
BISC 435-3 Introduction to Pest Management  
BISC 440-3 Biodiversity  
BISC 441-3 Evolution of Health and Disease  
BISC 497W-3 Undergraduate Research: Writing Intensive  
BISC 498-3 Undergraduate Research I  
BISC 499-3 Undergraduate Research II

\*recommended

plus three elective courses (nine units) chosen from any upper division undergraduate BISC or MASC or special topics courses appropriate for the selected stream, or alternative courses (e.g. MBB, KIN) as approved by the program advisor

Students complete a total of five lab courses (which may include one of BISC 497W, 498, 499) among their upper division courses.

### Open Stream

Students complete an additional eight courses (24 units) chosen from any upper division undergraduate BISC or MASC or special topics courses (e.g. MBB, KIN) as approved by the advisor.

Students complete five lab courses (which may include one of BISC 497W, 498, 499) among their upper division courses.

### Typical Lower Division Core Program

Although there are many variations, the following is a typical program for the first four terms.

### Term 1

BISC 102-4 Introduction to Biology  
CHEM 121-4 General Chemistry and Laboratory I  
MATH 154-3 Calculus I for the Biological Sciences  
PHYS 101-3 Physics for the Life Sciences I

### Term 2

BISC 101-4 Introduction to Biology  
CHEM 122-2 General Chemistry II  
CHEM 281-4 Organic Chemistry I  
MATH 155-3 Calculus II for the Biological Sciences

### Term 3

CHEM 282-2 Organic Chemistry II  
MBB 222-3 Molecular Biology and Biochemistry  
PHYS 102-3 Physics for the Life Sciences II  
Elective

and one of  
BISC 202-3 Genetics  
BISC 204-3 Introduction to Ecology

### Term 4

MBB 231-3 Cell Biology and Biochemistry  
STAT 201-3 Statistics for the Life Sciences (or 102)  
Electives

and one of  
BISC 202-3 Genetics  
BISC 204-3 Introduction to Ecology

**Note:** Biological sciences majors normally complete the chemistry, mathematics and physics requirements as well as the lower division biological sciences courses within the first 60 units (four terms).

## Honors Program

This program offers independent research and in-depth study. Entry requires a cumulative grade point average (CGPA) of 3.0 or higher (B standing), and department permission. Students complete all lower division requirements and at least 15 upper division units in biological sciences prior to application for entry. The honors program has the same requirements as the major except for the following additional requirements.

- maintenance of a minimum of 3.00 CGPA
- completion of a minimum of 60 upper division units in biological sciences or related subjects approved by the department, which must include a research-based honors thesis comprising BISC 490, 491 and 492W
- completion of appropriate electives to achieve 132 units, including the writing, quantitative and breadth requirements (see "Writing, Quantitative, and Breadth Requirements" on page 7).

## Biological Sciences Minor Program

Students complete all of  
BISC 101-4 Introduction to Biology  
BISC 102-4 Introduction to Biology

at least two of  
BISC 202-3 Genetics  
BISC 204-3 Introduction to Ecology  
MBB 222-3 Molecular Biology and Biochemistry  
MBB 231-3 Cell Biology and Biochemistry  
plus any 15 upper division biological sciences units, or closely related subject areas (including MASC courses), as approved by the department.

## Environmental Toxicology Minor Program

This program gives science undergraduates a thorough overview of environmental toxicology. They will be better qualified and eligible for employment with various industrial and governmental agencies engaged in environmental monitoring and research.

## Lower Division Requirements

The following lower division courses are required. Most students pursuing science degree programs will already have credit for most of these courses.

Students complete all of  
BISC 101-4 Introduction to Biology  
BISC 102-4 Introduction to Biology  
CHEM 121-4 General Chemistry and Laboratory I  
CHEM 122-2 General Chemistry II  
CHEM 126-2 General Chemistry Laboratory II  
CHEM 281-4 Organic Chemistry I  
CHEM 282-2 Organic Chemistry II  
CHEM 286-2 Organic Chemistry Laboratory II  
MBB 222-3 Molecular Biology and Biochemistry  
MBB 231-3 Cellular Biology and Biochemistry  
STAT 201-3 Statistics for the Life Sciences

and one of  
BISC 204-3 Introduction to Ecology  
EVSC 200-3 Introduction to Environmental Science

and one of  
MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences

and one of  
MATH 152-3 Calculus II  
MATH 155-3 Calculus II for the Biological Sciences

and one of  
PHYS 101-3 Physics for the Life Sciences I  
PHYS 120-3 Mechanics and Modern Physics  
PHYS 125-3 Mechanics and Special Relativity  
PHYS 140-4 Studio Physics – Mechanics and Modern Physics

and one of  
PHYS 102-3 Physics for the Life Sciences II  
PHYS 121-3 Optics, Electricity and Magnetism  
PHYS 126-3 Electricity, Magnetism and Light  
PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism

## Upper Division Requirements

BISC 312-3 Environmental Toxicology I  
BISC 313-3 Environmental Toxicology II  
BISC 432-3 Chemical Pesticides and the Environment  
plus two of  
BISC 445-3 Environmental Physiology of Animals (prerequisite BISC 305)  
CHEM 371-3 Chemistry of the Aqueous Environment (prerequisites CHEM 281 [or 150] and 360 [or 261])  
KIN 431-3 Environmental Carcinogenesis

and their prerequisites as noted in the "Actuarial Mathematics ACMA" on page 311.

Upper division credit may not fulfil units for more than one program. Some substitutions may be required. Appropriate course substitutions follow.

BISC 366-3 Plant Physiology  
BISC 405-3 Cell Physiology  
KIN 305-3 Human Physiology I  
KIN 306-3 Human Physiology II (Principles of Physiological Regulation)  
MBB 412-4 Enzymology

Students interested in an environmental toxicology minor should contact the department early. A 2.00 or higher GPA is required for minor program courses.

## Post Baccalaureate Diploma in Biological Sciences

This program is available in various biological sciences areas for students who have already completed a degree (usually) in science and who wish to upgrade their academic credentials. See "Biological Sciences BISC" on page 315 for 600 and 800 division course descriptions.

## Marine Science

Marine science programs may include both BISC and MASC courses to fulfil upper division biological sciences requirements.

MASC courses are offered on Vancouver Island's Bamfield Marine Sciences Centre in conjunction with universities in summer and fall in three or six week blocks. See the department in January for courses, and their use as substitutes for upper division BISC courses in major, minor or honors programs.

Course entry requires application through the Department of Biological Sciences well in advance of course commencement because candidate selection is limited. For information, consult the biological sciences department. To complete marine science courses, students must apply for university admission through the usual procedures, and be accepted (see "Admission and Readmission" on page 17). See page 416 for a list of MASC courses.

MASC course offerings may vary because instructors are drawn from different universities so prerequisites may vary slightly. Generally, upper division standing in biology is required; admission is competitive. Consult the brochure published each fall by the Bamfield Marine Sciences Centre which is available from the Department of Biological Sciences. Periodically, graduate courses will be offered (see "Department of Biological Sciences" on page 300).

## Students from other Departments

Those not enrolled in biological sciences programs may complete BISC 100, 101, 102. Admission to certain other courses is by permission of the department.

## Co-operative Education

Majors and honors students may apply for co-op education which includes four work terms during the academic program. See [www.sfu.ca/coop/science](http://www.sfu.ca/coop/science) or contact the science co-op co-ordinators in P9447 Shrum Science Centre, 778.782.5934.

## Department of Biomedical Physiology and Kinesiology

K9625 Shrum Science Centre, 778.782.3573 Tel, 778.782.3040 Fax, <http://www.sfu.ca/kinesiology>

### Director

P.C. Ruben, BSc, MSc (G Washington), PhD (Calg), Burnaby Mountain Endowed Professor

### Professors Emeriti

E.W. Banister BSc (Manc), MPE (Br Col), PhD (Ill), FASCM  
T.W. Calvert BSc(Eng) (Lond), MSEE (Wayne), PhD (Carnegie Tech), PEng  
A.E. Chapman Dip Phys Ed (Lough), MA (Ohio), MPhil, PhD (Lond)  
A.J. Davison BSc (Cape Town), MSc, PhD (Rutgers)  
J. Dickinson BA (Birm), PhD (Nott)  
R.G. Marteniuk BPE, MA (Alta), EdD (Calif)  
J.B. Morrison BSc (Glas), PhD (Strath), ARCST  
W.D. Ross BPE (Br Col), MA, MS, PhD (Ore), FASCM  
H. Weinberg BSc, MSc, PhD (Washington)

### Professors

P.N.S. Bawa BSc, MSc (Panjab), MSc, PhD (Alta)  
D.T. Finegood BSChE (Mich), MS (Northwestern), PhD (Calif)  
D. Goodman BPE, MPE (Br Col), PhD (Iowa)  
J.A. Hoffer BS (Mudd), PhD (Johns H)  
C. Krieger MD (Tor), MSc (Montr), PhD (London)  
C.L. MacKenzie BSc, MSc, PhD (Wat)

W.S. Parkhouse BPE (Alta), MPE, PhD (Br Col), Dean of Graduate Studies  
M.P. Rosin BSc (Sask), PhD (Tor)  
P.C. Ruben, BSc, MSc (G Washington), PhD (Calg), Burnaby Mountain Endowed Professor  
G.F. Tibbitts BEd (McG), MS, PhD (Calif), Canada Research Chair

### Associate Professors

A.P. Blaber BSc (Guelph), BEd (WOnt), MSc (Guelph), PhD (Wat)  
A.R. Brooks-Wilson BSc (S Fraser), MSc (Tor), PhD (Br Col)  
S.A. Lear BSc (S Fraser), PhD (Br Col)  
S.N. Robinovitch BSc (Br Col), MSc (MIT), PhD (Harvard/MIT), Canada Research Chair\*  
A.V. Vieira BSc (Calg), PhD (Alta)

### Assistant Professors

T.W. Claydon BSc, PhD (Leeds)  
V.E. Claydon BSc, PhD (Leeds)  
M. Donelan BKin (McM), MA, PhD (Calif)  
M.J. Wakeling BA, MA, PhD (Camb)  
M.D. White BSc, MSc (S Fraser), PhD (Laval)

### Senior Lecturers

J. Anthony BSc, MSc (Madr), PhD (All India IMS)  
R.C. Asmundson BSc, MSc (S Fraser)  
S. Brown BSc, MSc (S Fraser)  
R. Dill BSc, MSc (S Fraser)  
A.J. Leyland BEd (Exe), MSc (S Fraser)  
R. Ward BSc (Lough), MSc, PhD (S Fraser)

### Adjunct Professors

L. Hove-Madsen BSc, MSc, PhD (Aarhus)  
M.S. Koehle BSc (Qu), MSc (Tor), PhD (Br Col)  
P.M. Lane BEngMgt (McM), MASC (TechUNS), PhD (Dal)  
P. Pretorius BSc, MSc (Potchefstroom), DSc (Amst)  
D. Robinson BSc (Br Col), MSc, PhD (S Fraser)  
I. Rossberg-Gempton BA (S Fraser), MA (WLaure), PhD (S Fraser)  
A.W. Sheel BPE (New Br), MSc, PhD (Br Col)  
R.A. Strath MSc (Br Col), PhD (Alta), OD (New Eng Optometry)  
D.E.R. Warburton BA, MSc (York), PhD (Alta)  
L. Zhang BDS Dentistry (Western China), PhD (Tor)

### Associate Members

For areas of research, refer to the departments listed.

M.F. Beg, School of Engineering Science  
G. Chapman, School of Engineering Science  
B.L. Gray, School of Engineering Science  
B. Kaminska, School of Engineering Science  
C. Menon, School of Engineering Science  
M. Parameswaran, School of Engineering Science  
A.H. Rawicz, School of Engineering Science  
M.V. Sarunic, School of Engineering Science  
N.V. Watson, Department of Psychology  
E.C. Young, Department of Molecular Biology and Biochemistry

### Advisors

Ms. D. Bemister BSc (S Fraser), Co-operative Education Co-ordinator, K9620 Shrum Science Centre, 778.782.4541, [bemister@sfu.ca](mailto:bemister@sfu.ca)  
Ms. P. Deck BA, BPHE (Qu), MSc (Kinesiology)  
K8629 Shrum Science Centre, 778.782.4005, [kin\\_advisor@sfu.ca](mailto:kin_advisor@sfu.ca)

\*joint appointment with engineering science

## Mission

Our mission is to study human structure and function and their relation to health and movement. We seek to advance, apply and disseminate relevant knowledge and expertise.

The department builds on the basic sciences to link the study of movement, physiology and health with the broad scope of human endeavor. Faculty comprise anatomists, biochemists, biologists, biomechanists, biophysicists, engineers,

ergonomists, kinesiologists, physicians, physiologists and psychologists who study structure and function throughout the life cycle in health and disease, in benign and extreme environments, at work, at home, at sports and at play. Their educational goals impart a sound knowledge base and promote critical thinking, problem solving, research, technical and communication skills appropriate to the field, through undergraduate, graduate and continuing studies programs.

To this end, we strive for excellence in teaching, research and service programs focused on the following aspects of the human condition

- movement and its control
- regulation and adaptation of physiological systems
- growth, development and aging

and on the following applied disciplines.

- health promotion
- prevention of injury and disease
- functional evaluation and rehabilitation
- ergonomics/human factors
- environmental, exercise and work physiology

## Transfer Credit and Residency Requirements

Transfer students are advised that residency requirements apply to kinesiology programs.

## Programs Offered

The department offers a major in biomedical physiology and a major in kinesiology, leading to a BSc, BSc honors. The department also offers a minor in kinesiology, a minor in biomedical physiology, a post baccalaureate diploma in kinesiology, a certificate in applied human nutrition, and a certificate in health and fitness studies. Co-operative education helps biomedical physiology and kinesiology majors gain valuable work experience during their undergraduate studies.

The kinesiology major and honors programs are accredited with the Canadian Council of University Physical Education and Kinesiology Administrators (CCUPEKA).

Note that students cannot combine: a kinesiology major with a biomedical physiology minor; nor a biomedical physiology major with a kinesiology minor; nor a double major in kinesiology and biomedical physiology; nor a double minor in kinesiology and biomedical physiology.

## Teaching Certification

Kinesiology students with appropriate courses can apply to the British Columbia College of Teachers (BCCT) to have their degree accepted for professional certification. BCCT reviews applications individually. Contact the department for information.

## Prerequisite Course Grade

Students enrolling in kinesiology courses must have a grade of C- or better in prerequisite courses. Students enrolled in kinesiology certificate, minor, major (including concentrations), honors, second degree, and post baccalaureate diploma programs must have grade of C- or better in all required courses.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information.

## Admission Requirements

Bachelor of science program entry is possible via

- direct admission from high school

- transfer from a recognized post-secondary institution
- internal transfer from within Simon Fraser University

Admission is competitive. A separate admission average for each of the three entry routes is established each term, depending on spaces available and subject to the dean's approval. Admission averages are calculated on five required high school courses or five or more required post-secondary courses. If one or more courses have been duplicated (repeated), the grades from all course attempts will be used equally to calculate the kinesiology admission GPA.

#### Direct Admission – High School and Direct Transfer, Post Secondary Institutions

See "British Columbia and Yukon Applicants" on page 20.

#### Internal Transfer

Simon Fraser University students applying for Department of Biomedical Physiology and Kinesiology admission must complete the following courses with a grade of C- or better.

BISC 101-4 General Biology  
CHEM 121-4 General Chemistry and Laboratory I  
KIN 142-3 Introduction to Kinesiology

one of  
MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences

one of  
PHYS 101-3 Physics for the Life Sciences I  
PHYS 120-3 Mechanics and Modern Physics  
PHYS 125-3 Mechanics and Special Relativity  
PHYS 140-4 Studio Physics–Mechanics and Modern Physics

Applicants are selected based on an admission GPA calculated over these five required courses together with any of the following 9-10 courses.

CHEM 122-2 General Chemistry II  
CHEM 281-4 Organic Chemistry I  
KIN 201-3 Biomechanics  
KIN 205-3 Introduction to Human Physiology  
KIN 207-3 Human Motor Systems  
MBB 221-3 Cellular Biology and Biochemistry

and one of  
MATH 152-3 Calculus II  
MATH 155-3 Calculus II for the Biological Sciences

and one of  
PHYS 102-3 Physics for the Life Sciences II  
PHYS 121-3 Optics, Electricity and Magnetism  
PHYS 126-3 Electricity, Magnetism and Light  
PHYS 141-4 Studio Physics–Optics, Electricity and Magnetism

and  
STAT 201-3 Statistics for the Life Sciences

Apply for admission as soon as the five required courses have been completed. Unsuccessful applicants may complete any of the 10 additional courses to improve the admission GPA. A C- grade or better is required in each course used for the admission application. Those not meeting the kinesiology admission GPA upon completion of all four additional courses will be advised of alternatives.

**For students transferring some of core courses from another post-secondary institution:** only courses completed at Simon Fraser University (and not previously completed elsewhere) are used in the kinesiology admission GPA. Normally, at least 15 units from core courses are required as a basis for the GPA calculation. Exceptions must be approved by the department.

#### Application Procedure

Students should complete a program approval form available at the kinesiology general office and submit it to the kinesiology advisor by July 1 for fall term approval, November 1 for spring term approval, or March 1 for summer term approval.

### Biomedical Physiology Major Program

#### Program Requirements

To obtain a bachelor of science in biomedical physiology, students complete the following.

#### Lower Division Requirements

##### Biochemistry

Students complete both of  
MBB 222-3 Molecular Biology and Biochemistry  
MBB 231-3 Cellular Biology and Biochemistry 6 units

##### Biological Sciences

Students complete both of  
BISC 101-4 General Biology  
BISC 102-4 General Biology 8 units

##### Chemistry

Students complete all of  
CHEM 121-4 General Chemistry and Laboratory I  
CHEM 122-2 General Chemistry II  
CHEM 126-2 General Chemistry Laboratory II  
CHEM 281-5 Organic Chemistry I  
CHEM 282-2 Organic Chemistry II  
CHEM 286-2 Organic Chemistry Laboratory II 16 units

##### Kinesiology

Students complete all of  
KIN 142-3 Introduction to Kinesiology  
KIN 201-3 Biomechanics  
KIN 205-3 Introduction to Human Physiology 9 units

##### Mathematics

Students complete one of  
MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences  
plus one of  
MATH 152-3 Calculus II  
MATH 155-3 Calculus II for the Biological Sciences 6 units

##### Physics

Students complete one of  
PHYS 101-3 Physics for the Life Sciences I  
PHYS 120-3 Modern Physics and Mechanics  
PHYS 125-3 Mechanics and Special Relativity  
PHYS 140-4 Studio Physics – Mechanics and Modern Physics

plus one of  
PHYS 102-3 Physics for the Life Sciences II  
PHYS 121-3 Optics, Electricity and Magnetism  
PHYS 126-3 Electricity, Magnetism and Light  
PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism 6-8 units

##### Statistics

Students complete  
STAT 201-3 Statistics for the Life Sciences 3 units  
Total 54-56 units

#### Upper Division Requirements

The following courses must each be completed with a grade of C- or higher.

KIN 304W-3 Inquiry and Measurement in Kinesiology<sup>1</sup>  
KIN 305-3 Human Physiology I  
KIN 306-3 Human Physiology II  
KIN 326-4 Functional Anatomy  
KIN 407-3 Human Physiology Laboratory  
MBB 321-3 Intermediary Metabolism 19 units

and one of  
BISC 303-3 Microbiology

BISC 329-4 Introduction to Experimental Techniques  
BISC 333-3 Developmental Biology  
BISC 357-3 Gene Cloning  
BISC 403-3 Current Topics in Cell Biology  
BISC 405-3 Cell Physiology  
BISC 431-3 Molecular Biotechnology  
MBB 308-3 Molecular Biology and Biochemistry Laboratory I  
MBB 309-3 Molecular Biology and Biochemistry Laboratory II  
MBB 322-3 Molecular Physiology  
MBB 323-3 Introduction to Physical Biochemistry  
MBB 331-3 Molecular Biology 3-4 units

and seven of  
KIN 301-3 Biomechanics Laboratory  
KIN 310-3 Exercise/Work Physiology  
KIN 336-3 Microscopic Anatomy  
KIN 340-3 Active Health: Behavior and Promotion  
KIN 402-3 Mechanical Properties of Tissues  
KIN 412-3 Molecular and Cellular Cardiology  
KIN 415-3 Neural Control of Movement  
KIN 416-3 control of Limb Mechanics  
KIN 420-3 Selected Topics I\*  
KIN 421-3 Selected Topics II\*  
KIN 422-3 Selected Topics III\*  
KIN 423-3 Selected Topics IV\*  
KIN 426-3 Neuromuscular Anatomy  
KIN 430-3 Human Energy Metabolism  
KIN 431-3 Environmental Carcinogenesis  
KIN 442-3 Biomedical Systems  
KIN 444-3 Cardiac Disease: Pathophysiology and Assessment  
KIN 446-3 Neurobiology of Disease  
KIN 448-3 Rehabilitation of Movement Control  
KIN 484-3 Altitude and Aerospace Physiology  
KIN 496-3 Directed Study I\*  
KIN 498-3 Directed Study II\* 21 units

plus three upper division units from any faculty  
Total 46-47 units

<sup>1</sup>KIN 304W satisfies the University's breadth requirements of three upper division units in writing

\*must be selected topics courses in physiology

#### Unspecified and Partially Specified Electives

A total of 20 elective units are also required. These 20 units must include units from courses that will satisfy the University breadth requirement of six units each of designated humanities breadth (B-Hum) and social science breadth (B-Soc), and three units of lower division writing (W). For more information, please visit <http://www.sfu.ca/ugcr>. 20 units

Total 120-121 units

### Kinesiology Major Program

Please read descriptions of required courses before enrolling in the major or honors program (see "Kinesiology KIN" on page 408). The following is a summary outline of the general degree requirements for a bachelor of science.

#### Areas of Concentration

The department offers three areas of concentration for those wishing to complete a more specialized approach to their studies in kinesiology.

- active health and rehabilitation kinesiology
- ergonomics/human factors
- health and physiological sciences

Students majoring in kinesiology may choose the general program or one of the three concentrations. Each concentration has specific course requirements beyond the general requirements for a major.

#### Lower Division Requirements

The major program's lower division requirements are structured as a common core set for all majors, an additional set of required courses for one of the

concentrations, and breadth requirements for all kinesiology majors.

### Lower Division Core

The following are specified for kinesiology majors.

#### Biochemistry

Students complete one of

MBB 201-3 Biochemistry of the Cell

MBB 231-3 Cellular Biology and Biochemistry 3 units

#### Biological Sciences

Students complete

BISC 101-4 General Biology 4 units

#### Chemistry

Students complete all of

CHEM 121-4 General Chemistry and Laboratory I

CHEM 122-2 General Chemistry II

CHEM 281-4 Organic Chemistry I 10 units

#### Biomedical Physiology and Kinesiology

Students complete all of

KIN 142-3 Introduction to Kinesiology

KIN 201-3 Biomechanics

KIN 205-3 Introduction to Human Physiology

KIN 207-3 Information Processing in Human Motor Systems 12 units

#### Mathematics

Students complete one of

MATH 150-4 Calculus I with Review

MATH 151-3 Calculus I

MATH 154-3 Calculus I for the Biological Sciences

plus one of

MATH 152-3 Calculus II

MATH 155-3 Calculus II for the Biological Sciences 6 units

#### Physics

Students complete one of

PHYS 101-3 General Physics I

PHYS 120-3 Modern Physics and Mechanics

PHYS 125-3 Mechanics and Special Relativity

PHYS 140-4 Studio Physics – Mechanics and Modern Physics

plus one of

PHYS 102-3 General Physics II

PHYS 121-3 Optics, Electricity and Magnetism

PHYS 126-3 Electricity, Magnetism and Light

PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism

Statistics

Students complete

STAT 201-3 Statistics for the Life Sciences 3 units

Total 46 units

### Concentration Requirements

Students choosing to specialize in one of the kinesiology concentrations must complete additional lower division courses as specified below.

#### Active Health and Rehabilitation Concentration

Students complete all of

KIN 110-3 Human Nutrition: Current Issues

KIN 140-3 Contemporary Health Issues

KIN 143-3 Exercise Management

KIN 241-3 Sports Injuries: Prevention and Rehabilitation 12 units

#### Ergonomics and Human Factors Concentration

Students complete

KIN 180-3 Introduction to Ergonomics

#### Health And Physiological Sciences Concentration

*It is anticipated that this program will be discontinued.*

*Interested students should contact the advisor for more information.*

Students complete all of

CHEM 126-2 General Chemistry Laboratory II

CHEM 282-2 Organic Chemistry II

CHEM 286-2 Organic Chemistry Laboratory II

MBB 222-3 Molecular Biology and Biochemistry 9 units

### Breadth Requirements

For students admitted prior to September 2006, a minimum of six units must be selected from the Faculty of Arts and Social Sciences.

For students admitted September 2006 or later, a minimum of six units each of designated humanities breadth (B-Hum) and social sciences breadth (B-Soc) must be completed. At least three units of lower division course work should also be writing-intensive (W). The quantitative (Q), science breadth (B-Sci) and undesignated breadth (UB) requirements are satisfied through completion of the kinesiology lower division core and hence do not require additional work. For more information, see [www.sfu.ca/ugcr](http://www.sfu.ca/ugcr).

### Upper Division Requirements

Kinesiology majors complete the general program or one of three concentrations. Each option's upper division requirements is common to all plus additional upper division requirements specific to the option.

#### Upper Division Core

The following courses are required of all majors and must each be completed with a grade of C- or higher.

KIN 304W-3 Inquiry and Measurement in Kinesiology<sup>1</sup>

KIN 305-3 Human Physiology I

KIN 306-3 Human Physiology II

KIN 326-4 Functional Anatomy

KIN 340-3 Active Health: Behavior and Promotion

and one of<sup>2</sup>

KIN 301-3 Biomechanics Laboratory

KIN 407-3 Human Physiology Laboratory 19 units

<sup>1</sup>KIN 304W satisfies the University's breadth requirements of three upper division units in writing

<sup>2</sup>Students specializing in the ergonomics and human factors concentration can take both KIN 301 and 407 and count one as an elective.

#### General Program

Students complete an additional 21 kinesiology upper division units, excluding courses reserved for the minor program (KIN 325-3 and 342-3) or the honors program (KIN 497-3 and 499-12). MBB 321-3 may be used to satisfy three units of this requirement.

Total 40 units

For the degree, students must also complete an additional five upper division units chosen from any discipline within the University. Total 45 units

Students admitted in September 2006 or later must also complete WQB requirements with three units of writing-intensive credit at the upper division. This may be included within the 45 unit total for the degree. For more information, see [www.sfu.ca/ugcr](http://www.sfu.ca/ugcr).

#### Active Health and Rehabilitation Concentration

Students choosing this concentration must complete

KIN 303-3 Kinanthropometry

KIN 310-3 Exercise/Work Physiology

KIN 343-3 Active Health: Assessment and Programming 9 units

and four of

KIN 311-3 Applied Human Nutrition

KIN 312-3 Nutrition for Fitness and Sport

KIN 375-3 Human Growth and Development

KIN 412-3 Molecular and Cellular Cardiology

KIN 426-3 Neuromuscular Anatomy

KIN 431-3 Environmental Carcinogenesis

KIN 444-3 Cardiac Rehabilitation

KIN 445-3 Advanced Cardiac Rehabilitation

KIN 446-3 Neurobiology of Disease

KIN 448-3 Rehabilitation of Movement Control

KIN 461-3 Physiological Aspects of Aging

KIN 467-3 Human Motor Control

KIN 481-3 Activity-Generated Musculo-Skeletal Disorders

KIN 496-3 Directed Study I\*

KIN 498-3 Directed Study II\*

and one additional upper division kinesiology course, excluding courses reserved for the minor program (KIN 325, 342) or the honors program (KIN 497, 499). 3 units

\*can be counted toward area of concentration if relevant to active health or rehabilitation kinesiology. Please see the head of the area of concentration for permission to count any of these courses towards the area of concentration requirement. 24 units

Total 43 units

For the degree, students must also complete an additional two units of upper division work chosen from any discipline within the University. 2 units

Total 45 units

Students admitted in September 2006 or subsequently must also complete WQB requirements with three units of writing-intensive credit at the upper division. This may be included within the 45 unit total for the degree. For information, see [www.sfu.ca/ugcr](http://www.sfu.ca/ugcr).

#### Ergonomics and Human Factors Concentration

Students choosing this concentration complete all of

KIN 303-3 Kinanthropometry

KIN 488-3 Ergonomics Laboratory 6 units

and four of\*

KIN 310-3 Exercise/Work Physiology

KIN 380-3 Occupational Biomechanics

KIN 381-3 Psychology of Work

KIN 382-3 Physical Hazards in the Workplace

KIN 383-3 Human-Machine and Human-Computer Interaction

KIN 481-3 Activity-Generated Musculoskeletal Disorders

KIN 486-3 Human Factors in Industrial Design 12 units

\*The remaining three courses in the above list that are not used, may be used as electives (see electives course list below).

and six of

GERO 401-3 Aging and the Built Environment

IAT 333-3 Interaction Design Methods†

IAT 334-3 Interface Design†

IAT 335-3 Analysis of Design Situations†

KIN 343-3 Active Health: Assessment and

Programming

KIN 367-3 Psychology of Motor Skill Acquisition

KIN 402-3 Mechanical Properties of Tissues

KIN 415-3 Neural Control of Movement

KIN 416-3 Control of Limb Mechanics

KIN 420-3 Selected Topics I\*

KIN 421-3 Selected Topics II\*

KIN 422-3 Selected Topics III\*

KIN 423-3 Selected Topics IV\*

KIN 442-3 Biomedical Systems

KIN 448-3 Rehabilitation of Movement Control

KIN 461-3 Physiological Aspects of Aging

KIN 467-3 Human Motor Control

KIN 484-3 Altitude and Aerospace Physiology

KIN 485-4 Human Factors in the Underwater Environment

KIN 496-3 Directed Studies I\*

KIN 498-3 Directed Studies II\*

†requires additional prerequisites

\*can be counted towards area of concentration if relevant to ergonomics or human factors. See the area of concentration head for permission to count these toward the area of concentration requirement.

Relevant courses from other departments may be considered as electives upon advance approval by the ergonomics and human factors concentration steering committee. 18 units

Total 55 units

A further 10 lower or upper division elective units may be completed from any discipline within the university. The following are recommended.

IAT 201-3 Human-Computer Interaction and Cognition†  
IAT 235-3 Information Design†

†requires additional prerequisites

For the degree, students admitted September 2006 or subsequently must also complete WQB requirements with three units of writing-intensive credit at the upper division. This may be included within the 52 unit total. For more information, see [www.sfu.ca/ugcr](http://www.sfu.ca/ugcr).

### Health and Physiological Sciences

#### Concentration

*It is anticipated that this program will be discontinued. Interested students should contact the advisor.*

Students choosing this concentration complete all of MBB 321-3 Intermediary Metabolism

and one of

BISC 303-3 Microbiology  
BISC 405-3 Cell Physiology  
BISC 431-3 Molecular Biotechnology  
MBB 308-3 Molecular Biology and Biochemistry Laboratory I  
MBB 309-3 Molecular Biology and Biochemistry Laboratory II  
MBB 322-3 Molecular Physiology

and seven of

KIN 310-3 Exercise/Work Physiology  
KIN 336-3 Microscopic Anatomy  
KIN 402-3 Mechanical Properties of Tissues  
KIN 412-3 Molecular and Cellular Cardiology  
KIN 415-3 Neural Control of Movement  
KIN 416-3 Control of Limb Mechanics  
KIN 420-3 Selected Topics I\*  
KIN 421-3 Selected Topics II\*  
KIN 422-3 Selected Topics III\*  
KIN 423-3 Selected Topics IV\*  
KIN 426-3 Neuromuscular Anatomy  
KIN 430-3 Human Energy Metabolism  
KIN 431-3 Environmental Carcinogenesis  
KIN 442-3 Biomedical Systems  
KIN 446-3 Neurobiology of Disease  
KIN 448-3 Rehabilitation of Movement Control  
KIN 484-3 Altitude and Aerospace Physiology  
KIN 496-3 Directed Study I\*  
KIN 498-3 Directed Study II\*

27 units  
Total 46 units

\*must be selected topics courses in physiology

Students admitted in September 2006 or subsequently must also complete WQB requirements with three upper division units of writing-intensive credit. This may be included within the 46 unit total. See [www.sfu.ca/ugcr](http://www.sfu.ca/ugcr) for more information.

### Unspecified and Partially Specified Electives

A total of 23 elective units are required. Of these, six must be from the social science and humanities course list (see "Social Science and Humanities Course List, Breadth Designated Courses" below) to meet CCUPEKA certification requirements. These 23 units must also include courses that will satisfy the University breadth requirements of six units each of designated humanities breadth (B-Hum) and social science breadth (B-Soc). However, courses from the social science and humanities course list that have B-Hum or B-Soc designation may be used to satisfy both requirements.

23 units  
Total 120 units

### Social Science and Humanities Course List, Breadth Designated Courses

ARCH 105-3 The Evolution of Technology B-Soc  
ARCH 201-3 Introduction to Archaeology B-Soc  
CMNS 354-3 Communications and Social Issues in Design  
COGS 100-3 Introduction to Cognitive Science B-Hum, B-Soc, B-Sci

CRIM 101-3 Introduction to Criminology B-Soc  
CRIM 355-3 The Forensic Sciences B-Soc  
FPA 129-3 Fundamental Integration of Human Movement  
GEOG 386-3 Geography, Health and Health Care  
GERO 300-3 Introduction to Gerontology B-Soc  
GERO 302-3 Health Promotion and Aging  
GERO 404-3 Health and Illness in Later Life  
GERO 420-4 Sociology of Aging  
HIST 409-3 Disease and Society  
HUM 227-3 Introduction to the Study of the Future B-Hum  
PHIL 001-3 Critical Thinking  
PHIL 100-3 Knowledge and Reality B-Hum Writing-Intensive  
PHIL 110-3 Introduction to Logic and Reasoning  
PHIL 120-3 Introduction to Moral Philosophy B-Hum Writing-Intensive  
PHIL 210-4 Natural Deductive Logic  
PHIL 144-3 Introduction to the Philosophy of Natural and Social Science  
PHIL 300-3 Introduction to Philosophy B-Hum  
PSYC 100-3 Introduction to Psychology I B-Soc  
PSYC 102-3 Introduction to Psychology II B-Soc  
PSYC 106-3 Psychological Issues in Contemporary Society B-Soc  
PSYC 365-3 Health Psychology  
SA 101-4 Introduction to Anthropology B-Soc  
SA 150-4 Introduction to Sociology B-Soc  
SA 218-4 Illness, Culture and Society  
SA 318-3 Anthropology of Medicine

### Requirements to Transfer to Professional Schools

Students are eligible to receive a BSc degree after completion of the second year of professional study and have completed at least 90 units of Simon Fraser University credit comprising the following.

- all lower division requirements
- 27 upper division units in biomedical physiology and kinesiology (including KIN 304, 305, 306, 326, 340 and either 301 or 407)
- acceptance into an accredited professional program in dentistry, medicine, chiropractic, or veterinary medicine

Professional program courses must not duplicate those already completed at Simon Fraser University and must be acceptable for transfer credit to the University. Candidates apply for transfer credit and for receipt of the degree through Student Services.

### Suggested Course Pathways

Suggested course selections for majors and any of the three areas of concentration are available from the kinesiology general office.

#### Typical First Year Course Schedule

**Term 1**  
BISC 101-4 General Biology  
CHEM 121-4 General Chemistry and Laboratory I  
KIN 142-3 Introduction to Kinesiology  
MATH 154-3 Calculus I for the Biological Sciences  
**Term 2**  
CHEM 122-2 General Chemistry II  
CHEM 281-4 Organic Chemistry I  
MATH 155-3 Calculus II for the Biological Sciences  
PHYS 101-3 General Physics I  
elective (KIN 143 recommended)

### Biomedical Physiology Honors Program

#### Application Requirements

- Application requires
- completion of a minimum of 60 units
  - a minimum CGPA of 3.00

- submission of a completed program approval form, along with the student's most recent unofficial record, to the undergraduate advisor.

### Graduation Requirements

To graduate with a bachelor of science with honors, the student must successfully complete

- a minimum of 132 units, with a minimum of 60 upper division units of which at least 54 must be in biomedical physiology and kinesiology courses
- completion of all biomedical physiology major program requirements
- KIN 497 and KIN 499
- a minimum CGPA of 3.00 on all relevant measures (CGPA, upper division grade point average, department grade point average, department upper division grade point average)

Note: honors students may count only one of either KIN 496 or 498 toward their 27 upper division elective biomedical physiology and kinesiology units.

### Kinesiology Honors Program

#### Application Requirements

The application requirements are the same as for the biomedical physiology honors program (see above).

### Graduation Requirements

Graduation requirements are the same as for the biomedical physiology program except that kinesiology honors students will complete the kinesiology major program requirements instead of the biomedical physiology major program requirements (see above).

### Biomedical Physiology Minor Program

#### Application Requirements

Acceptance into this program is based on the same application requirements as for the biomedical physiology major program.

### Program Requirements

There is a maximum number of allowable transferable units that count towards the minor program from any other institution.

#### Lower Division Requirements

##### Biochemistry

Students complete both of  
MBB 222-3 Molecular Biology and Biochemistry  
MBB 231-3 Cellular Biology and Biochemistry

##### Biological Sciences

Students complete both of  
BISC 101-4 General Biology  
BISC 102-4 General Biology

##### Chemistry

Students complete all of  
CHEM 121-4 General Chemistry and Laboratory I  
CHEM 122-2 General Chemistry II  
CHEM 126-2 General Chemistry Laboratory II  
CHEM 281-4 Organic Chemistry I  
CHEM 282-2 Organic Chemistry Laboratory II

##### Kinesiology

Students complete  
KIN 205-3 Introduction to Human Physiology

##### Mathematics

Students complete one of  
MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences

plus one of

MATH 152-3 Calculus II

MATH 155-3 Calculus II for the Biological Sciences

#### Physics

Students complete one of

PHYS 101-3 General Physics I

PHYS 120-3 Modern Physics and Mechanics

PHYS 125-3 Mechanics and Special Relativity

PHYS 140-4 Studio Physics – Mechanics and Modern Physics

plus one of

PHYS 102-3 General Physics II

PHYS 121-3 Optics, Electricity and Magnetism

PHYS 126-3 Electricity, Magnetism and Light

PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism

#### Upper Division Requirements

Students complete both of

KIN 305-3 Human Physiology I

KIN 306-3 Human Physiology II

and one of

KIN 324-4 Principles of Human Anatomy

KIN 325-3 Basic Human Anatomy

Students complete six additional upper division KIN units from the following list. Note that some courses may require additional prerequisites.

KIN 304W-3 Inquiry and Measurement in Kinesiology†

KIN 310-3 Exercise/Work Physiology

KIN 336-3 Microscopic Anatomy

KIN 402-3 Mechanical Properties of Tissues

KIN 412-3 Molecular and Cellular Cardiology

KIN 415-3 Neural Control of Movement

KIN 420-3 Selected Topics I\*

KIN 421-3 Selected Topics II\*

KIN 422-3 Selected Topics III\*

KIN 423-3 Selected Topics IV\*

KIN 426-3 Neuromuscular Anatomy

KIN 430-3 Human Energy Metabolism

KIN 431-3 Environmental Carcinogenesis

KIN 444-3 Cardiac Disease: Pathophysiology and Assessment

KIN 446-3 Neurobiology of Disease

KIN 448-3 Rehabilitation of Movement Control

KIN 484-3 Altitude and Aerospace Physiology

KIN 485-3 Human Factors in the Underwater Environment

and one of

KIN 496-3 Directed Study I\*

KIN 498-3 Directed Study II\*

†KIN 304W satisfies the University's breadth requirements of three upper division units in writing

\*must be selected topics courses in physiology

A minimum GPA of 2.0 calculated on all biomedical physiology and kinesiology courses used to satisfy the requirements is required as well as a minimum upper division GPA of 2.0 calculated on those upper division biomedical physiology and kinesiology courses used to satisfy the requirements.

## Kinesiology Minor Program

### Application Requirements

Application requires

- completion of KIN 105 or 205 or 208, and KIN 142 and 143 with a minimum grade of C- in each course
- completion of two of KIN 110, 201, 207 or 241 with a minimum grade of C- in each
- submission of a program approval form to the undergraduate advisor.

Admission is competitive. The admission GPA is calculated each term on the five required courses. If one or more have been duplicated (repeated), grades from all course attempts will be used equally to calculate kinesiology's admission GPA.

### Program Requirements

There is a maximum number of allowable transferable units that count towards the minor program from any other institution, including the Open Learning Agency.

Students complete

KIN 105-3 Fundamentals of Human Structure and Function

and both of

KIN 142-3 Introduction to Kinesiology

KIN143-3 Exercise Management

and two of

KIN 110-3 Human Nutrition: Current Issues

KIN 201-3 Biomechanics

KIN 207-3 Information Processing in Human Motor Systems

KIN 241-3 Sports Injuries — Prevention and Rehabilitation

and one of

KIN 325-3 Basic Human Anatomy

KIN 342-3 Active Health

KIN 367-3 Psychology of Motor Skill Acquisition

plus 12 additional upper division kinesiology units

A minimum GPA of 2.0 calculated over all kinesiology courses used to satisfy the requirements is required as well as a minimum upper division GPA of 2.0 calculated from those upper division kinesiology courses used to satisfy the requirements.

## Certificate in Applied Human Nutrition

This certificate is intended for professionals who are not dietitians nor nutritionists, but are concerned with health and wellness promotion such as nurses, kinesiologists, professional coaches and personal trainers, teachers, trained food service supervisors, dietary technicians, pharmacists and clinical psychologists. The certificate provides an enhanced understanding of the relationships among food, body composition, health, and human performance.

Please note that this certificate does not qualify the individual as a registered dietitian.

Admission is governed by the University's admissions regulations (see "British Columbia and Yukon Applicants" on page 20). After University admission, submission of a completed program approval form to the kinesiology undergraduate advisor is required for formal acceptance in the program.

### Requirements

There is an allowable transferable credit maximum that counts toward the certificate program from any other institution, including the Open Learning Agency.

Students complete one of

KIN 105-3 Fundamentals of Human Structure and Function\*

KIN 205-3 Introduction to Human Physiology

KIN 208-3 Introduction to Physiological Systems

and all of

KIN 110-3 Human Nutrition: Current Issues\*

KIN 111-3 Food and Food Safety\*

KIN 212-3 Food and Society\*

KIN 311-3 Applied Human Nutrition

Students must also complete nine units (three courses) of electives chosen from the following. Only three of these units may be from 100 division courses.

GERO 302-3 Health Promotion and Aging†

GERO 407-3 Nutrition and Aging†

KIN 140-3 Contemporary Health Issues\*

KIN 142-3 Introduction to Kinesiology\*

KIN 143-3 Exercise Management\*

KIN 303-3 Kinanthropometry†

KIN 312-3 Nutrition in Fitness and Sport\*

KIN 342-3 Active Health\*

KIN 375-3 Human Growth and Development\*†

KIN 430-3 Human Energy Metabolism†

KIN 431-3 Environmental Carcinogenesis†

KIN 461-3 Physiological Aspects of Aging\*

\*courses available by distance education

†courses which have additional prerequisites

Students must have a minimum 2.00 GPA calculated on all required courses. The certificate is normally completed within five years of admission to the certificate program. Units applied to one certificate may not be applied to another certificate or diploma.

## Certificate in Health and Fitness Studies

This program provides a co-ordinated program of study on a full or part time basis in the areas of health, fitness and nutrition, and provides basic knowledge in the functions of the healthy human body at rest and during physical exertion. The program is useful to those supervising training and/or fitness programs, to sport coaches, and to the general public.

Admission is governed by the University admissions regulations. See "British Columbia and Yukon Applicants" on page 20.

After being admitted to Simon Fraser University, submission of a completed program approval form to the kinesiology undergraduate advisor is required for formal acceptance in the program.

### Requirements

There is a maximum number of allowable transferable units that count towards the certificate from any other institution, including the Open Learning Agency.

Students complete one of

KIN 105-3 Fundamentals of Human Structure and Function\*

KIN 205-3 Introduction to Human Physiology

KIN 208-3 Introduction to Physiological Systems

and all of

KIN 110-3 Current Topics in Nutrition\*

KIN 140-3 Contemporary Health Issues\*

KIN 142-3 Introduction to Kinesiology\*

KIN 143-3 Exercise Management\*

and one of

KIN 342-3 Active Health\*

KIN 343-3 Active Health: Assessment and Promotion†

Students must also complete nine units (three courses) of electives chosen from the following.

KIN 207-3 Information Processing Human Motor Systems

KIN 221-3 Special Topics in Kinesiology

KIN 241-3 Sports Injuries – Prevention and Rehabilitation

KIN 303-3 Kinanthropometry†

KIN 310-3 Exercise/Work Physiology\*†

KIN 312-3 Nutrition for Fitness and Sport\*

KIN 325-3 Basic Human Anatomy\*

KIN 340-3 Active Health: Behavior and Promotion

KIN 367-3 Psychology of Motor Skill Acquisition\*†

KIN 375-3 Physiological Basis of Growth and Development\*

KIN 461-3 Physiological Aspects of Aging†

\*courses available by distance education

†courses which have additional prerequisites

Students must have a minimum 2.00 GPA calculated on courses used toward the certificate, and a current cardiopulmonary resuscitation (CPR) certificate at time of completion. The certificate is normally completed within five years of program admission.

Units applied to one certificate may not be applied to another certificate or diploma.

## Post Baccalaureate Diploma in Kinesiology

This program is normally available for students who have completed a degree other than kinesiology. For further information about the program's general regulations, see "Post Baccalaureate Diploma Program" on page 7.

### Requirements

Successful completion of an approved program comprised of 30 units of upper division or graduate courses, including the following courses, is required.

KIN 304-3 Inquiry and Measurement in Kinesiology  
KIN 305-3 Human Physiology I  
KIN 306-3 Human Physiology II  
KIN 326-4 Functional Anatomy  
KIN 340-3 Active Health: Behavior and Promotion  
and one of  
KIN 301-3 Biomechanics Laboratory  
KIN 407-3 Human Physiology Laboratory

A minimum 2.5 grade point average is required for courses that are applied to the diploma. Courses must be selected from an approved list in consultation with an advisor. Students interested in this program normally hold a BSc or equivalent. Students are responsible for satisfying the necessary prerequisites.

### Co-operative Education

Co-operative education combines work experience with academic studies. Students spend alternate terms on campus and in paid, study-related jobs. Co-op programs are available in kinesiology and biomedical sciences.

Arrangements for work experiences are made through the department's co-op co-ordinator and the University's co-op education office. For further details, see "Co-operative Education" on page 212.

## Department of Chemistry

C8035 Shrum Science Centre, 778.782.3590 Tel, 778.782.3765 Fax, [www.sfu.ca/chemistry](http://www.sfu.ca/chemistry)

### Chair

Z.-G. Ye BSc (Hefei Technol), MSc (Xi'an Jaotong), PhD (Bordeaux)

### Professors Emeriti

S. Aronoff AB, PhD (Calif)  
T.N. Bell BSc, PhD (Durh)  
Y.L. Chow BSc (Natnl Taiwan), PhD (Duquesne), FCIC  
J.M. D'Auria BSc (Rensselaer), MSc, PhD (Yale)  
F.W.B. Einstein BSc (New Zealand), MSc, PhD (Cant), FCIC  
L. Funt BSc, MSc (Dal), PhD (McG), FCIC  
I.D. Gay BSc, MSc (Dal), PhD (Lond)  
C.H.W. Jones BSc, PhD (Manc)  
R.G. Korteling AB (Hope), PhD (Calif)  
G.L. Malli BSc (Delhi), MSc (McM), MS, PhD (Chic)  
A.C. Oehlschlager BSc, PhD (Oklahoma)  
W.R. Richards AB, PhD (Calif)\*  
K.N. Slessor BSc, PhD (Br Col)  
D. Sutton BSc, PhD (Nott)  
E.M. Voigt BSc, MSc (McM), PhD (Br Col)  
J. Walkley BSc, PhD (Liv), FCIC  
S. Wolfe BA, MA (Tor), PhD (Ott), FCIC, FRSC

### Professors

G. Agnes BSc (Wat), PhD (Alta)  
A.J. Bennet BSc, PhD (Brist), FCIC  
N.R. Branda BSc (Tor), PhD (MIT), Canada Research Chair  
R.B. Cornell BS (Houghton), PhD (Penn)\*  
R. Hill BSc, PhD (WOnt), FCIC

S. Holdcroft BSc (Salf), PhD (S Fraser), FCIC  
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P.W. Percival BA, MA, DPhil (Oxf), FCIC  
B.M. Pinto BSc, PhD (Qu), FCIC, FRSC  
R.K. Pomeroy BSc (Lond), PhD (Alta)  
D. Sen BA (Camb), MPhil, PhD (Yale)\*  
Z.-G. Ye BSc (Hefei Technol), MSc (Xi'an Jaotong), PhD (Bordeaux)  
R.N. Young BSc (Vic, BC), PhD (Br Col), OC, Merck Frosst LEEF Chair in Pharmaceutical Genomics and Bioinformatics in Drug Discovery  
H.Z. Yu BSc, MSc (Shandong), PhD (Peking)

### Associate Professors

M.H. Eikerling BSc (Aachen Tech), PhD (Munich Tech)  
G.W. Leach BSc, MSc, PhD (Tor)  
P.C.H. Li BSc (HK), MSc, PhD (Tor)  
E. Plettner BSc, PhD (S Fraser)  
K. Starosta BSc, MSc, PhD (Warsaw)  
D.J. Voadlo BSc, PhD (Br Col), Canada Research Chair  
J.J. Wilkie BSc, MSc, PhD (Tor)  
V. Williams BSc, PhD (Qu)  
P.D. Wilson BSc (Newcastle, UK), MSc, PhD (Manc)

### Assistant Professors

C. Andreoiu BSc, MSc (Bucharest), PhD (Lund)  
R.A. Britton BSc (Wat), PhD (Br Col)  
B.D. Gates BS (W Wash), MS, PhD (Wash), Canada Research Chair  
M.A. O'Neill BSc, PhD (Dal)  
T.J. Storr BSc (Vic, BC), PhD (Br Col)  
C.J. Walsby BSc, PhD (Cant)

### Adjunct Faculty

M.J. Abrams BA (Bowdoin), PhD (MIT)  
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P.D. Brown BSc (S Nazarene), MSc, PhD (Idaho)  
J.A.C. Clyburne BSc (Acad), PhD (Dal)  
L.R. Dalton BS, MS, (Mich), PhD (Harvard)  
C.M. Friesen BS, BSE (J Brown), PhD (Alabama)  
K. Ghandi BSc (Shiraz, Iran), PhD (S Fraser)  
C.G. Gill BSc (Acad), PhD (Br Col)  
B.O. Keller BSc (Terutlingen), PhD (Alta)  
A.R. Lewis BSc, MSc (Auck), PhD (Br Col)  
K. Malek BSc (Pars), MSc (Sharif, Iran), PhD (Delft)  
C.D. Montgomery BSc (McM), PhD (WOnt)  
T.J. Ruth BSc, PhD (Clark)  
L.E. Sojo BSc, PhD (C'dia)  
A.S. Tracey BSc, PhD (S Fraser)  
N.N. Weinberg MSc (Moscow State), PhD (Acad Science Moscow)  
D.P. Wilkinson BSc (Br Col), PhD (Ott)

### Associate Members

J.L. Bechhoefer, Department of Physics  
D.H. Boal, Department of Physics  
N.R. Forde, Department of Physics  
G.J. Gries, Department of Biological Sciences  
K.L. Kavanagh, Department of Physics  
M.W. Paetzel, Department of Molecular Biology and Biochemistry

### Senior Lecturers

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J.C. Brodovitch BSc (Pasteur, Stras), PhD (McG)  
A.J.L. Hanlan BSc, PhD (Tor)  
U.C. Kreis MSc, Dr-Ing (Darmstadt)  
S.M. Lavieri BSc (Metropol, Venezuela), MSc (Venezolano de Investigaciones Cientificas, Venezuela), PhD (Central de Venezuela)  
R.D. Sharma MSc, PhD (Panjab)

### Lecturers

R.L. Goyan BSc, PhD (Calg)  
G. Mund BSc (Br Col), PhD (S Fraser)

### Advisor

Dr. K.S. MacFarlane BSc, MSc, PhD (Br Col), C8049 Shrum Science Centre, 778.782.3350, [kenmac@sfu.ca](mailto:kenmac@sfu.ca)

\*joint appointment with biochemistry

## Students Intending to Specialize in Chemistry

The point at which a high school or regional college student enters the chemistry program is governed by the student's subject knowledge. CHEM 110 and 111 are not required for the BSc degree but are available as electives to those with no chemistry knowledge or who are starting from BC high school chemistry 11. Those with BC high school chemistry 12 (or equivalent) normally start with CHEM 121. Major and honors students must fulfil program requirements below. Whether majoring in chemistry or not, students may not enrol in any CHEM course for which a D grade was obtained in any prerequisite.

The following statements clarify and standardize the minimum requirements that a student must fulfil to complete a chemistry course as well as those to pass a combination lecture/laboratory course.

### Course Non-completion

The following will constitute non-completion of the required material in a chemistry course.

- not writing the final examination or its equivalent
- not completing the required minimum number of experiments in a laboratory course or the laboratory component of a course
- not completing additional or alternative material specified by the instructor

The letter grade N will be awarded in these cases.

Students must pass both the lecture and laboratory components individually to obtain a passing grade in lecture/laboratory combination courses.

### Graduate Courses

Graduate courses are available to senior undergraduate students for upper division chemistry credit. See "Chemistry CHEM" on page 328 for a list of all CHEM courses offered, or consult an advisor for specific course offerings.

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information.

## Major Program

Mathematics and physics courses should be completed as early as possible.

### Lower Division Requirements

(53-54 units)

CHEM 121-4 General Chemistry and Laboratory I  
CHEM 122-2 General Chemistry II  
CHEM 126-2 General Chemistry Laboratory II  
CHEM 215-4 Introduction to Analytical Chemistry  
CHEM 230-3 Inorganic Chemistry  
CHEM 236-3 Inorganic Chemistry Laboratory  
CHEM 260-4 Atoms, Molecules, Spectroscopy  
CHEM 281-4 Organic Chemistry I  
CHEM 282-2 Organic Chemistry II  
CHEM 286-2 Organic Chemistry Laboratory II  
MATH 152-3 Calculus II  
MATH 232-3 Applied Linear Algebra  
MATH 251-3 Calculus III  
MBB 222-3 Molecular Biology and Biochemistry  
and one of  
MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I

and all of  
PHYS 120-3 Mechanics and Modern Physics  
PHYS 121-3 Optics, Electricity and Magnetism  
PHYS 131-2 Physics Laboratory I

or all of

PHYS 125-3 Mechanics and Special Relativity  
PHYS 126-3 Electricity, Magnetism and Light  
PHYS 131-2 Physics Laboratory I

or both of

PHYS 140-4 Studio Physics – Mechanics and Modern Physics  
PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism

### Upper Division Requirements

(28 units)

CHEM 316-4 Introductory Instrumental Analysis  
CHEM 332-3 The Chemistry of Transition Metals  
CHEM 336-2 Advanced Inorganic Chemistry Laboratory  
CHEM 360-3 Thermodynamics and Chemical Kinetics  
CHEM 366-3 Physical Chemistry Laboratory  
CHEM 380-4 Chemical and Instrumental Methods of Identification of Organic Compounds

and an additional 9 units of upper division credit in CHEM, MBB or NUSC courses, including at least six units of 400 division CHEM courses.

### Electives

(38-39 units)

In addition to the above, students must complete

- courses chosen to fulfil the WQB requirements (see "Writing, Quantitative, and Breadth Requirements" on page 7)
- upper division courses chosen from any faculty (but excluding EDUC 401-407) to total a minimum of 44 upper division units
- electives at any division from any faculty to provide 120 units as is required for the degree.

Specialization in physical or theoretical chemistry requires more mathematics and physics courses than specified above and a computer programming course.

### Typical Course Sequence

The following is a typical course sequence for the first four terms. Variations are possible.

#### Term 1

CHEM 121-4 General Chemistry and Laboratory I  
MATH 151-3 Calculus I  
PHYS 120-3 Mechanics and Modern Physics electives

#### Term 2

CHEM 122-2 General Chemistry II  
CHEM 126-2 General Chemistry Laboratory II  
MATH 152-3 Calculus II  
PHYS 121-3 Optics, Electricity and Magnetism  
PHYS 131-2 Physics Laboratory I elective

#### Term 3

CHEM 230-3 Inorganic Chemistry  
CHEM 236-3 Inorganic Chemistry Laboratory  
CHEM 281-4 Organic Chemistry I  
MATH 232-3 Applied Linear Algebra  
MBB 222-3 Molecular Biology and Biochemistry

#### Term 4

CHEM 215-4 Introduction to Analytical Chemistry  
CHEM 260-4 Atoms, Molecules, Spectroscopy  
CHEM 282-2 Organic Chemistry II  
CHEM 286-2 Organic Chemistry Laboratory II  
MATH 251-3 Calculus III

### Honors Program

Mathematics and physics courses should be completed as early as possible to benefit the study of chemistry.

### Lower Division Requirements

(59-60 units)

Students complete the same lower division requirements as those specified for the major program plus the following two additional courses.

PHYS 211-3 Intermediate Mechanics  
PHYS 231-3 Physics Laboratory II

### Upper Division Requirements

(48 units)

CHEM 316-4 Introductory Instrumental Analysis  
CHEM 332-3 The Chemistry of Transition Metals  
CHEM 336-2 Advanced Inorganic Chemistry Laboratory  
CHEM 360-3 Thermodynamics and Chemical Kinetics  
CHEM 366-3 Physical Chemistry Laboratory  
CHEM 380-4 Chemical and Instrumental Methods of Identification of Organic Compounds  
CHEM 481-5 Undergraduate Research  
NUSC 341-3 Introduction to Radiochemistry and one of  
CHEM 460-3 Advanced Physical Chemistry  
CHEM 464-3 Quantum Chemistry

and an additional 18 upper division units in CHEM, MBB or NUSC courses, including at least nine units of 400 division CHEM courses.

### Electives

(24-25 units)

In addition to the above, students must complete

- courses chosen to fulfil the WQB requirements (see page 7)
- upper division courses from any faculty (excluding EDUC 401-407) to total 60 upper division units minimum
- electives at any division from any faculty to provide the minimum 132 units for the honors

Those specializing in physical or theoretical chemistry should complete more mathematics courses than specified above and a course in computer programming.

### Minor Program

See "Major – Minor Program" on page 6 for regulations. Chemistry minors require a minimum of 14 upper division units in chemistry, biochemistry or nuclear science (including at least eight units in chemistry and excluding undergraduate research courses) plus prerequisites.

### Environmental Chemistry Minor Program

Students complete all of

CHEM 121-4 General Chemistry I  
CHEM 122-2 General Chemistry II  
CHEM 126-2 General Chemistry Laboratory II  
CHEM 215-4 Introduction to Analytical Chemistry  
CHEM 230-3 Inorganic Chemistry  
CHEM 236-3 Inorganic Chemistry Laboratory  
CHEM 281-4 Organic Chemistry I  
CHEM 316-4 Introductory Instrumental Analysis  
CHEM 317-2 Analytical Environmental Chemistry  
CHEM 371-3 Chemistry of the Aqueous Environment\*  
CHEM 372-3 Chemistry of the Atmospheric Environment\*

and at least one of

CHEM 380-4 Chemical and Instrumental Methods of Identification of Organic Compounds  
CHEM 419-3 Special Topics in Analytical Chemistry  
NUSC 341-3 Introduction to Radiochemistry

\*CHEM 360 must be completed as a prerequisite

### Nuclear Science Minor Program

To qualify for this program offered jointly with the Department of Physics, students must complete 14 upper division units from the following.

CHEM 482-3 Directed Study in Advanced Topics of Chemistry  
NUSC 341-3 Introduction to Radiochemistry  
NUSC 342-3 Introduction to Nuclear Science  
NUSC 344-3 Nucleosynthesis and Distribution of the Elements  
NUSC 346-2 Radiochemistry Laboratory  
NUSC 444-3 Special Topics in Nuclear Science  
NUSC 485-3 Particle Physics  
PHYS 385-3 Quantum Physics

### Advice to Students from Other Faculties

Prerequisites and corequisites cited in the *Course Catalogue* are for those intending to specialize in science. Some may be waived for programs in the Faculties of Applied Sciences, Arts and Social Sciences, Business Administration, Education, and Health Sciences. CHEM 110 and 111 are for students with no previous training in chemistry.

### Biochemistry

For information about biochemistry, see "Department of Molecular Biology and Biochemistry" on page 200.

### Chemical Physics

See "Chemical Physics Major Program" on page 204.

### Co-operative Education

N. Erickson, co-op co-ordinator, Faculty of Science, 778.782.4654

Co-operative education combines work experience with academic studies. The student spends alternate terms on campus and in study-related jobs.

A major and honors leading to a BSc, and a co-op education program incorporating four work terms, are available in chemistry and related areas. The work practicum requirements are CHEM 306, 307, 406 and 407. Application is at least three months prior to term start in which CHEM 306 is completed. Seek department advice early. A minimum 2.67 CGPA is required to enrol and continue in the co-op major. Higher averages are required an honors in co-op. See "Co-operative Education" on page 212.

## Department of Earth Sciences

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778.782.5387 Tel, 778.782.4198 Fax,  
www.sfu.ca/earth-sciences

#### Chair

D.J. Thorkelson BSc, MSc (Br Col), PhD (Car)

#### Professor Emeritus

M.C. Roberts BSc (Lond), MA (Tor), PhD (Iowa), PGeo

#### Professors

D.M. Allen BSc, MSc, PhD (Car), PGeo  
A.J. Calvert BA (Oxf), PhD (Camb)  
J.J. Clague BA (Occidental), MSc (Calif, PhD (Br Col), PGeo, Canada Research Chair in Natural Hazards  
J.A. MacEachern BSc, MSc (Regina), PhD (Alta)  
D. Stead BSc (Exe), MSc (Leeds), PhD (Nott), CEng, Forest Renewal BC Chair in Resource Geoscience and Geotechnics  
D.J. Thorkelson BSc, MSc (Br Col), PhD (Car)



**Associate Professors**

D. Marshall BSc, MSc (Car), DSc (Lausanne)  
 B.C. Ward BSc, PhD (Alta)  
 G. Williams-Jones BSc, MSc (Montr),  
 PhD (Open, UK)

**Assistant Professors**

S. Dashtgard BSc, PhD (Alta), PGeo  
 G. Flowers BA (Colorado), PhD (Br Col), Canada  
 Research Chair in Glaciology  
 H.D. Gibson BA (Colgate), MSc, PhD (Car)  
 D. Kirste BSc (Br Col), MSc (Wat), PhD (Calg)

**Adjunct Professors**

K.L. Bann BSc, PhD (W'gong)  
 P. Bobrowsky BSc (Alta), MA (S Fraser), PhD (Alta)  
 B.P. Coffey BSc (N Carolina), PhD (VPI&SU)  
 M. Colpron BSc (Queb), MSc (Vermont), PhD (Qu)  
 R. Couture BSc, MA, PhD (Laval)  
 R. Enkin BSc, MSc (Tor), Diplome Doctorat (Paris)  
 D. Froese BSc (Leth), MSc, PhD (Calg)  
 L. Godin BSc, MSc (Queb), PhD (Car)  
 L. Jackson BA (San Francisco), MSc (Stan),  
 PhD (Calg)  
 O. Lian BSc, MSc (S Fraser), PhD (WOnt)  
 J.W.H. Monger BSc (Reading), MSc (Kansas),  
 PhD (Br Col)  
 J. Moore BSc, PhD (MIT)  
 B. Rabus MA (Mün), PhD (Alaska)  
 K.A. Simpson BSc (Br Col), PhD (Tas)  
 L.C. Struik BSc (Br Col), PhD (Calg)  
 P.H. Whitfield BSc, MSc (Br Col)

**Senior Lecturers**

K. Cameron BSc (St Mary's, Can), MSc (Nfld)  
 R. Dunlop BSc (Alta), MSc (Br Col)

**Laboratory Instructor**

C. Hansen BSc, MSc (S Fraser)

**Academic Advisor**

Ms. T. Vaisanen, 7203 Technology and Science  
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**Stream Advisors**

Environmental Geoscience Stream Advisor Dr. B.  
 Ward, 7235 Technology and Science Complex 1,  
 778.782.4229 Tel

General Earth Sciences Stream Advisor Dr. G.  
 Williams-Jones, 7225 Technology and Science  
 Complex 1, 778.782.3306 Tel

Geology Stream Advisor Mr. K. Cameron, 7530  
 Technology and Science Complex 2,  
 778.782.4703 Tel

**Minimum Grade Requirement**

Students wishing to register for earth sciences  
 courses must obtain a C- grade or better in  
 prerequisite courses.

**Writing, Quantitative, and Breadth Requirements**

Students completing degree programs must fulfil  
 writing, quantitative and breadth requirements as part  
 of their program. See "Writing, Quantitative, and  
 Breadth Requirements" on page 7 for information.

**Major Program**

The department offers three course streams leading  
 to course concentrations: geology stream,  
 environmental geoscience stream, and general earth  
 sciences stream.

The geology stream and environmental geoscience  
 stream are designed to permit students to enrol as a  
 geologist or environmental geoscientist respectively,  
 in the Association of Professional Engineers and  
 Geoscientists of British Columbia (APEGBC), the  
 governing body that regulates geoscience practice in  
 BC. All students intending to practice as a  
 geoscientist in BC must be licensed by APEGBC, and

are strongly advised to pursue one of these two  
 streams. Many other Canadian provinces also require  
 professional licensing.

Students not intending to practice as professional  
 geoscientists or seek accreditation may choose to  
 pursue the general earth sciences stream. This  
 stream may best accommodate students in some joint  
 major programs.

Students should seek the advice of a departmental  
 program advisor.

**Lower Division Requirements**

Students in all streams must complete a minimum of  
 54 units including all of

CHEM 121-4 General Chemistry and Laboratory I  
 CHEM 122-2 General Chemistry II  
 CHEM 126-2 General Chemistry Laboratory II  
 EASC 101-3 Physical Geology  
 EASC 201-3 Stratigraphy and Sedimentation  
 EASC 202-3 Introduction to Mineralogy  
 EASC 204-3 Structural Geology I  
 EASC 205-3 Introduction to Petrology  
 EASC 206-2 Field Geology I  
 EASC 207-3 Introduction to Applied Geophysics  
 EASC 208-3 Introduction to Geochemistry  
 EASC 210-3 Historical Geology  
 GEOG 213-3 Introduction to Geomorphology  
 MATH 152-3 Calculus II

and one of  
 MATH 150-4 Calculus I with Review  
 MATH 151-3 Calculus I

and one of  
 STAT 101-3 Introduction to Statistics  
 STAT 201-3 Statistics for the Life Sciences

and one of  
 PHYS 101-3 Physics for the Life Sciences I\*  
 PHYS 120-3 Mechanics and Modern Physics  
 PHYS 125-3 Mechanics and Special Relativity

and one of  
 PHYS 102-3 Physics for the Life Sciences II\*  
 PHYS 121-3 Optics, Electricity and Magnetism  
 PHYS 126-3 Electricity, Magnetism and Light

and one of  
 PHYS 130-2 Physics for the Life Sciences  
 Laboratory\*

PHYS 131-2 Physics Laboratory I

\*with a grade of B or better

**Upper Division Requirements**

Students are encouraged to select upper division  
 elective courses in consultation with an academic  
 advisor, as APEGBC has specific groupings of  
 elective courses for each stream, respectively.

**Geology Stream**

Students must complete a minimum of 42 units  
 including all of  
 EASC 301-3 Igneous and Metamorphic Petrology  
 EASC 302-3 Sedimentary Petrology  
 EASC 306-3 Field Geology II  
 EASC 309-3 Global Tectonics  
 EASC 310-3 Paleontology

and at least one of  
 EASC 303-3 Environmental Geoscience  
 EASC 304-3 Hydrogeology  
 EASC 313-3 Introduction to Soil and Rock  
 Engineering  
 EASC 403-3 Quaternary Geology

and at least one of  
 EASC 406-3 Field Geology III  
 EASC 416-3 Field Methods in Hydrogeology

and at least 18 units chosen from  
 EASC 300-3 Selected Topics in Earth Sciences  
 EASC 303-3 Environmental Geoscience  
 EASC 304-3 Hydrogeology

EASC 307-3 Applied Geophysics  
 EASC 312-3 Stratigraphy  
 EASC 313-4 Introduction to Soil and Rock  
 Engineering  
 EASC 314-3 Principles of Glaciology  
 EASC 317-3 Global Geophysics  
 EASC 400-3 Selected Topics in Earth Sciences  
 EASC 401-3 Mineral Deposits  
 EASC 402-3 Sedimentology  
 EASC 403-3 Quaternary Geology  
 EASC 404-3 Structural Geology II  
 EASC 406-3 Field Geology III  
 EASC 408-3 Regional Geology of Western Canada  
 EASC 410-3 Groundwater Contaminant and  
 Transport  
 EASC 411-3 Terrain Analysis  
 EASC 412-3 Groundwater Geochemistry  
 EASC 413-3 Resource Geotechnics  
 EASC 416-3 Field Techniques in Hydrogeology  
 EASC 417-3 Seismology  
 EASC 420-3 Petroleum Geology  
 EASC 421-3 Volcanology  
 EASC 491-1 Directed Reading\*  
 EASC 492-2 Directed Reading\*  
 EASC 493-3 Directed Reading\*

**Environmental Geoscience Stream**

Students complete a minimum of 25 units including all  
 of

EASC 303-3 Environmental Geoscience  
 EASC 304-3 Hydrogeology  
 EASC 306-3 Field Geology II  
 EASC 313-3 Introduction to Soil and Rock  
 Engineering  
 EASC 403-3 Quaternary Geology

and one of  
 GEOG 311-4 Hydrology  
 GEOG 317-4 Soil Science

and at least one of  
 EASC 301-3 Igneous and Metamorphic Petrology  
 EASC 302-3 Sedimentary Petrology  
 EASC 309-3 Global Tectonics  
 EASC 310-3 Paleontology

and at least one of  
 EASC 406-3 Field Geology III  
 EASC 416-3 Field Techniques in Hydrogeology

and a minimum of 19 additional units chosen from  
 EASC 300-3 Selected Topics in Earth Sciences  
 EASC 301-3 Igneous and Metamorphic Petrology  
 EASC 302-3 Sedimentary Petrology  
 EASC 307-3 Applied Geophysics  
 EASC 309-3 Global Tectonics  
 EASC 310-3 Paleontology  
 EASC 312-3 Stratigraphy  
 EASC 314-3 Principles of Glaciology  
 EASC 317-4 Global Geophysics  
 EASC 400-3 Selected Topics in Earth Sciences  
 EASC 401-3 Mineral Deposits  
 EASC 402-3 Sedimentology  
 EASC 404-3 Structural Geology II  
 EASC 406-3 Field Geology III  
 EASC 408-3 Regional Geology of Western Canada  
 EASC 410-3 Groundwater Contaminant and  
 Transport  
 EASC 411-3 Terrain Analysis  
 EASC 412-3 Groundwater Geochemistry  
 EASC 413-3 Resource Geotechnics  
 EASC 416-3 Field Techniques in Hydrogeology  
 EASC 417-3 Seismology  
 EASC 418-1 Terrain Stability: Assessment and  
 Mitigation  
 EASC 419-1 Forest Harvesting Technology  
 EASC 420-3 Petroleum Geology  
 EASC 421-3 Volcanology  
 EASC 491-1 Directed Readings\*  
 EASC 492-2 Directed Readings\*  
 EASC 493-3 Directed Readings\*  
 GEOG 311-4 Hydrology

GEOG 313-4 River Geomorphology  
 GEOG 317-4 Soil Science  
 GEOG 412-4 Glacial Processes and Environments

### General Earth Sciences Stream

Students complete a minimum of six units including EASC 306-3 Field Geology II

and at least one of

EASC 406-3 Field Geology III

EASC 416-3 Field Techniques in Hydrogeology

and at least 30 other upper division EASC units.

\*students may only complete a maximum of three units from a combination of EASC 491, 492, or 493

### Other Requirements

Students in the geology stream must also complete at least two additional units in the Faculty of Science or physical geography at the upper division. These courses may be used toward the minor requirements in another department. Some of these courses may also satisfy APEGBC requirements.

Students in the general earth sciences stream must also complete at least eight additional units in the Faculty of Science or physical geography at the upper division. These courses may be used toward the minor requirements in another department.

In addition, of the 120 units required for graduation, students complete six units of courses designated as Writing (W), six units of courses designated as Quantitative (Q); and 24 units of courses identified as Breadth (B), including 18 units of courses identified as Designated Breadth courses (six units of social sciences, six of humanities and six of science), and six units of courses identified as Undesignated Breadth (UB) completed outside the major program. Several WQB courses are satisfied within the major program.

### Honors Program

This BSc program offers a wider cross-section of discipline-related courses while providing an opportunity for independent research. Entry requires a 3.00 or higher (B standing) CGPA, and departmental permission. This program has the same requirements as the major except for the following additional requirements.

- maintenance of a minimum 3.00 CGPA
- completion of 60 units minimum of 300 and 400 division EASC or physical geography courses, or related courses approved by the department. Students are strongly advised to select courses in consultation with advisors with career goals in mind.
- completion of appropriate electives to achieve a final total of at least 132 units, including at least 12 units from outside the Faculty of Science
- completion of EASC 499

### Minor Program

Earth Sciences minor students are subject to the general regulations of the faculty in which they are enrolled and must complete a minimum of 15 upper division units in Earth Sciences (EASC 300 division and above), together with all prerequisites.

### Certificate in Earth Science

This program provides both part-time and full-time students with the opportunity to understand the fundamentals of earth sciences without necessarily specializing in earth sciences.

### Program Requirements

This certificate requires completion of at least 23 units of required course work and electives as follows. Students complete the following eight units.

one of

EASC 101-3 Physical Geology

GEOG 111-3 Earth Systems

and one of

EASC 106-3 Earth Through Time

EASC 210-3 Historical Geology

and

EASC 206-2 Field Geology I

and at least 15 units selected from the following.

EASC 103-3 The Rise and Fall of the Dinosaurs

EASC 104-3 Geohazards — Earth in Turmoil

EASC 107-3 Economic Geological Resources

GEOG 213-3 Introduction to Geomorphology

REM 100-3 Global Change

and any other 200, 300 or 400 division EASC course.

This certificate allows students to pursue their 15 elective units in specific course concentrations. Some suggested electives grouping are as follows.

#### Environmental Focus

EASC 104-3 Geohazards — Earth in Turmoil

EASC 107-3 Economic Geological Resources

EASC 208-3 Introduction to Geochemistry

EASC 303-3 Environmental Geoscience

EASC 304-3 Hydrogeology

REM 100-3 Global Change

#### General Earth Sciences Breadth Courses

EASC 103-3 The Rise and Fall of the Dinosaurs

EASC 104-3 Geohazards — Earth in Turmoil

EASC 107-3 Economic Geological Resources

REM 100-3 Global Change

#### Geology Focus

EASC 201-3 Stratigraphy and Sedimentation

EASC 202-3 Introduction to Mineralogy

EASC 204-3 Structural Geology I

EASC 208-3 Introduction to Geochemistry

#### Hazards Focus

EASC 104-3 Geohazards — Earth in Turmoil

EASC 303-3 Environmental Geoscience

EASC 207-3 Introduction to Geophysics

GEOG 213-3 Introduction to Geomorphology

#### Paleontology Focus

EASC 103-3 The Rise and Fall of the Dinosaurs

EASC 201-3 Stratigraphy and Sedimentation

EASC 210-3 Historical Geology

EASC 310-3 Paleontology

### Certificate in Forestry Geoscience

This program, which utilizes geoscience courses that with direct relevance to forestry industry careers, is directed to earth sciences or physical geography majors. Certificate units may not be applied to another University certificate or diploma.

### Program Requirements

The certificate requires the completion of 30-32 units of required course work and electives as follows.

#### Required Courses (24 units)

EASC 204-3 Structural Geology I

EASC 313-3 Introduction to Soil and Rock

Engineering

EASC 411-3 Terrain Analysis

EASC 413-3 Resource Geotechnics

EASC 418-1 Terrain Stability: Assessment and Mitigation

EASC 419-1 Forest Harvesting Technology

GEOG 213-3 Introduction to Geomorphology

GEOG 317-4 Soil Science

and either

GEOG 253-3 Aerial Photographic Interpretation

or both of

EASC 206-2 Field Geology

EASC 306-3 Field Geology II

### Elective Courses

Students complete one of

EASC 304-3 Hydrogeology

GEOG 311-4 Hydrology

and one of

EASC 403-3 Quaternary Geology

GEOG 313-4 River Geomorphology

GEOG 412-4 Glacial Processes and Environments

GEOG 417-4 Advanced Soil Science

### Co-operative Education

Co-operative education, combining relevant work experience with academic studies in alternate terms on campus and in study related employment, includes pre-employment orientation and four full-time paid work terms. Co-operative education is available to qualified earth sciences major and honors students.

To enrol, students should attend the co-op information meetings held in the first two weeks of the term prior to the term in which they wish to work. Students should seek advice from the science and environment co-operative education office as early as possible in their university careers to facilitate optimal scheduling. Contact the Co-operative Education Office, 8108 South Science Building, 778.782.4716.

### Professional Registration as a BC Geoscientist

The right to practice in, and to accept professional responsibility for geoscience in BC is limited to registered members of the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC). Requirements can be met through the Department of Earth Sciences and selected courses from other university departments. Consult the advisor for further details.

## General Science Program

P9316 Shrum Science Centre, 778.782.3772 Tel,  
 778.782.3424 Fax,  
[www.sfu.ca/~science/degrees/general.html](http://www.sfu.ca/~science/degrees/general.html)

#### Advisor

Ms. R. Hotell, Faculty Assistant

This degree program provides broad education in several fields with specialization in at least two. It requires two minors chosen from below, one of which must be in the Faculty of Science. Restrictions for the combination of minors is listed below.

Students must have their selection of minors for the BSc general science program approved by the program advisor as early in their program as possible.

Only one minor may be selected from each of the following six subject areas.

- biological sciences, environmental toxicology, kinesiology
- molecular biology and biochemistry, chemistry, environmental chemistry
- mathematics, statistics, computing science
- physics, nuclear science
- earth science, physical geography
- archaeology, psychology

Because of the proximity of subject matter, the following combinations of minors are *not acceptable*:

- biological sciences, molecular biology and biochemistry
- molecular biology and biochemistry, environmental toxicology
- chemistry, nuclear science
- kinesiology, molecular biology and biochemistry
- environmental chemistry, environmental toxicology

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information.

## Lower Division Requirements

Students complete all of  
 BISC 101-4 General Biology  
 BISC 102-4 General Biology  
 CHEM 121-4 General Chemistry and Laboratory I  
 CHEM 122-2 General Chemistry II  
 CHEM 126-2 General Chemistry Laboratory II  
 and all of  
 PHYS 101-3 Physics for the Life Sciences I  
 PHYS 102-3 Physics for the Life Sciences II  
 PHYS 130-2 Physics for the Life Sciences Laboratory  
 or all of  
 PHYS 120-3 Mechanics and Modern Physics  
 PHYS 121-3 Optics, Electricity and Magnetism  
 PHYS 131-2 General Physics Laboratory I  
 or all of  
 PHYS 140-4 Studio Physics – Mechanics and Modern Physics  
 PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism  
 and both of  
 MATH 154-3 Calculus I for the Biological Sciences  
 MATH 155-3 Calculus II for the Biological Sciences  
 or both of  
 MATH 151-3 Calculus I (or MATH 150)  
 MATH 152-3 Calculus II  
 and one of  
 EASC 101-3 Physical Geology  
 GEOG 111-3 Earth Systems  
 and one lower or upper division statistics course

## Other Requirements

The following general requirements must be satisfied.

- additional upper division courses (excluding EDUC 401-407) to total 44 units of upper division credit
- a 2.0 GPA in upper division courses required for each of two subject area minors, with a minimum C- grade in all courses used for the subject area minors

Consult departmental advisors about selection of upper division courses in subject minors. Students should include science-related courses such as PHIL 244, 341 and HIST 360, 361 in their programs.

# Management and Systems Science Program

Simon Fraser University Surrey, Central City,  
 250–13450 102nd Avenue, Surrey, BC V3T 0A3,  
 778.782.7486 Tel, 778.782.7488 Fax,  
<http://students.surrey.sfu.ca/mssc>

For a list of faculty, see "Department of Mathematics" on page 196 and "Department of Statistics and Actuarial Science" on page 206.

### Program Director

Dr. T.M. Loughin BSc (Rensselaer), MSc (N Carolina), PhD (Iowa State), 14–335 Central City, Simon Fraser University Surrey, 778.782.8037

### Advisor

Mrs. N. Williams BA (S Fraser), 14th floor Central City, Simon Fraser University Surrey, 778.782.7486

The Faculty of Science, with the Departments of Mathematics, Statistics and Actuarial Science, Economics, the Faculty of Business Administration,

and the School of Computing Science, offer a major and honors in management and systems science (MSSC) at the Surrey campus leading to a BSc degree. These are highly structured programs providing a multidisciplinary approach to quantitative methods for business and industry in an environment of rapid changes in technology.

The program is managed by the Faculty of Science at the Surrey campus. A steering committee consisting of representatives from the above mentioned departments and faculty serve as liaison between participating departments and the program director. Where possible, the director and steering committee members will be based on the Surrey campus.

Students formally apply to be admitted into the program. Applications can be considered both for students entering Simon Fraser University, and for students already enrolled. Admission into the program is decided on a competitive basis. Students must maintain a 2.7 cumulative grade point average (CGPA) in MSSC program course work to remain in the program and to graduate. It is strongly recommended that students contact the Surrey science advisor or program director early about admission and scheduling.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information.

## Major Program

Under program and University regulations, a general degree requires 44 upper division units in courses numbered 300 and above, completion of 120 units, and the major program. Completion of all lower and upper division courses shown below is required. However, students should be aware of particular department requirements for course entry. Contact those departments for information.

## Lower Division Requirements

### Business Administration

Students complete all of  
 BUS 207-3 Managerial Economics  
 BUS 251-3 Financial Accounting I Computing Science  
 BUS 272-3 Behavior in Organizations

**Note:** the BUS 207 requirement may be waived if the student has credit for ECON 301

### Computing Science

Students complete one of  
 CMPT 125-3 Introduction to Computing Science and Programming II  
 CMPT 126-3 Introduction to Computing Science and Programming

and both of  
 CMPT 225-3 Data Structures and Programming  
 CMPT 275-4 Software Engineering

### Economics

Students complete both of  
 ECON 103-4 Principles of Economics (I)  
 Microeconomics  
 ECON 105-4 Principles of Economics (II)  
 Macroeconomics

### Mathematics and Computing Science

Students complete both of  
 MACM 101-3 Discrete Mathematics I  
 MACM 201-3 Discrete Mathematics II

### Mathematics

Students complete one of  
 MATH 150-4 Calculus I with Review  
 MATH 151-3 Calculus I

MATH 154-3 Calculus I for the Biological Sciences  
 MATH 157-3 Calculus for the Social Sciences I

and both of

MATH 152-3 Calculus II  
 MATH 251-3 Calculus III

and one of

MATH 232-3 Applied Linear Algebra  
 MATH 240-3 Algebra I: Linear Algebra

### Statistics

Students complete both of  
 STAT 270-3 Introduction to Probability and Statistics  
 STAT 285-3 Intermediate Probability and Statistics

### Recommended

The following course is recommended.

CMPT 212-3 Object-oriented Applications Design in C++

## Upper Division Requirements

For a BSc degree, all of the upper division courses listed below are required.

### Business Administration

Students complete all of  
 BUS 343-3 Introduction to Marketing  
 BUS 360-4 Business Communication  
 BUS 361-3 Project Management  
 BUS 473-4 Operations Management

### Computing Science

Students complete one of  
 BUS 440-4 Simulation in Management Decision Making  
 CMPT 305-3 Computer Simulation and Modelling  
 and all of  
 CMPT 307-3 Data Structures and Algorithms  
 CMPT 354-3 Database Systems I  
 CMPT 370-3 Information System Design

### Management and Systems Science

Students complete both of  
 MSSC 480-1 Undergraduate Seminar in Management and Systems Science  
 MSSC 481-1 Undergraduate Seminar in Management and Systems Science

### Mathematics

Students complete both of  
 MATH 308-3 Linear Optimization  
 MATH 348-3 Probabilistic Models in Operations Research

and one of

MACM 316-3 Numerical Analysis I  
 MATH 310-3 Introduction to Ordinary Differential Equations  
 MATH 343-3 Applied Discrete Mathematics  
 MATH 345-3 Introduction to Graph Theory

### Statistics

Students complete both of  
 STAT 350-3 Linear Models in Applied Statistics  
 STAT 380-3 Introduction to Stochastic Processes

Students should note the prerequisites for these courses. However, BUS 237 and 336 are waived for MSSC majors and honors. MSSC 480 and 481 cannot be completed concurrently.

## Recommended Courses

For major or honors, the following upper division courses are recommended.

BUS 312-4 Business Finance  
 BUS 445-3 Analysis of Data for Management  
 BUS 488-3 Group Dynamics and Teamwork  
 BUEC 396-3 The Structure of Industry  
 CMPT 405-3 Design and Analysis of Computing Algorithms  
 CMPT 417-3 Intelligent Systems  
 ECON 431-5 Intermediate Mathematical Economics  
 MATH 309-3 Continuous Optimization  
 MATH 408-3 Discrete Optimization

MATH 448-3 Network Flows  
 STAT 300-3 Statistics Communication  
 STAT 400-3 Data Analysis  
 STAT 410-3 Statistical Analysis of Sample Surveys  
 STAT 430-3 Statistical Design and Analysis of Experiments  
 STAT 460-3 Bayesian Statistics

## Double Majors and Minors

Students wishing to complete a second major or minor in addition to a management and systems science (MSSC) major must satisfy all MSSC requirements. At least 34 upper division units must be allocated exclusively to the MSSC major. This includes MSSC 480/481 and at least nine units from each of the lists under the sub-headings *Business Administration*, *Computing Science*, *Mathematics* and *Statistics*. Units used to satisfy MSSC upper division requirements beyond these 34 can be applied simultaneously to other major, minor or honors.

## Honors Program

Under University regulations, an honors degree requires completion of a minimum of 60 upper division units in courses numbered 300 and above, including at least 50 upper division units in the honors program, and completion of at least 132 units. Honors students require a graduation grade point average of not less than 3.00.

Students complete all of the requirements, as specified above, for the major program.

In addition, the following upper division courses are required including

STAT 330-3 Introduction to Mathematical Statistics

and one of

CMPT 405-3 Design and Analysis of Computing Algorithms

CMPT 417-3 Intelligent Systems

and one of

MATH 309-3 Continuous Optimization

MATH 408-3 Discrete Optimization

MATH 445-3 Graph Theory

MATH 448-3 Network Flows

Students must also complete at least three business administration or economics units at the 400 division.

**Note:** Students who wish to combine the MSSC honors program with another major or minor should consult with the MSSC director.

## Department of Mathematics

K10512 Shrum Science Centre, 778.782.3331/3332  
 Tel, 778.782.4947 Fax, www.math.sfu.ca

### Chair

T. Archibald BMath (Wat), MA (York), MA, PhD (Tor)

### Professors Emeriti

B.R. Alspach BA (Wash), MA, PhD (Calif)

J.L. Berggren BS, MS, PhD (Wash)

G. Bojadziev PhD (Sofia Mech Eng Inst)

T.C. Brown BA (Reed), AM, PhD (Wash, Mo)

A. Das BSc, MSc (Calc), PhD (University Coll, Dublin), DSc (Calc)

R. Harrop BA, MA, PhD (Camb)

A.H. Lachlan BA, MA, PhD (Camb), FRSC

R.W. Lardner BA, PhD, ScD (Camb)

N.R. Reilly BSc, PhD (Glas)

C.Y. Shen BS, MS, PhD (Oregon State)

M. Singh AB, MA (Punj, India), MSc, PhD (Brown)

B.S. Thomson BSc (Tor), MA, PhD (Wat)

### Professors

T. Archibald BMath (Wat), MA (York), MA, PhD (Tor)

P.B. Borwein BSc (WOnt), MSc, PhD (Br Col),

Burnaby Mountain Endowed Professor

L. Goddyn BSc (S Fraser), MMath, PhD (Wat)

B. Mohar BSc, MSc, PhD (Ljubljana), Canada Research Chair

M.B. Monagan BSc (Massey), MMath, PhD (Wat)

A. Punnen BSc (Kerala), MSc (Kanpur),

PhD (IIT Kanpur)

R.D. Russell BS, BA, MA, PhD (New Mexico)

### Associate Professors

C. Chauve Maitrise, DEA, PhD (Bordeaux)

I. Chen BSc (Qu), DPhil (Oxf)

K-K.S. Choi BSc, MPhil (HK), PhD (Texas)

R. Choksi BSc (Tor), MS, PhD (Brown)

J. Jedwab BA (Camb), PhD (Lond)

M.C.A. Kropinski BSc (Qu), MMath (Wat), PhD (Rensselaer)

P. Lisonek MSc (Palacky), PhD (J Kepler)

D. Muraki BSc, MSc (Cal Tech), PhD (Northwestern)

N. Nigam BSc (IIT Kharagpur), MSc, PhD (Delaware)

S. Ruuth BMath (Wat), MSc, PhD (Br Col)

L. Stacho MSc, PhD (Slovak Acad Sc)

J. Stockie BMath (Wat), PhD (Br Col)

M.R. Trummer PhD (Zür)

P. Tupper BSc (S Fraser), PhD (Stan)

### Assistant Professors

J. Bell BSc (Wat), MSc (McG), PhD (Calif)

N. Bruin PhD (Leiden)

M. DeVos BSc (Carnegie-Mellon), PhD (Prin)

R. Fetecau BSc (Iasi), MSc (Bucharest),

PhD (Cal Tech)

Z. Lu BSc (Anhui), MSc (Xi'an Jiaotong), MSc

(Alabama), PhD (Georgia IT)

M. Mishna BMath (Wat), MSc (S Fraser),

PhD (UQAM)

A.M. Oberman BSc (Tor), MSc, PhD (Chic)

T. Stephen BMath (Wat), PhD (Mich)

J.F. Williams MSc (S Fraser), PhD (Bath)

R. Wittenberg BSc (Natal), MSc (Cape Town), PhD (Prin)

K. Yeats BMath (Wat), PhD (Boston)

### Adjunct Professors

N. Belacel BOpRes (ScTech Algiers),

PhD (Libre Bruxelles)

A. Celler MSc, PhD (Warsaw)

W. Hare BSc (Brock), MSc (Alta), PhD (S Fraser)

S. Kabadi BS (Bombay), MTech (IIT Bombay), PhD (Texas)

E.W. Lee BSc (Tor), MSc, PhD (S Fraser)

S. Mitrovic-Minic BSc, MSc (Belgrade),

PhD (S Fraser)

E. Pechlaner PhD (Vienna)

A. Rutherford BSc (Qu), PhD (Br Col)

G. Sabin BSc, MSc (S Fraser), PhD (Windsor)

N. Tariq BSc, MSc (Lond), PhD (New Br)

G. Van Brummelen BSc (Alta), MSc, PhD (S Fraser)

J. Verner, BSc, MSc (Qu), PhD (Edin)

### Associate Members

P. Liljedahl, Faculty of Education

R. Zazkis, Faculty of Education

### Senior Lecturers

M.M. Dubiel MA, PhD (Warsaw)

V. Jungic BSc (Sarajevo), MSc (Zagreb),

PhD (S Fraser)

N. Kouzniak MSc, PhD (Acad Sc Ukraine),

PhD (TU Vienna)

R. Pyke BSc (Vic, BC), MSc, PhD (Tor)

### Lecturers

J. Gray BSc, MSc (S Fraser)

P. Menz BSc (Tor), MSc, BEd (Br Col)

J. Mulholland BSc (S Fraser), MSc, PhD (Br Col)

### Advisor

Ms. D. Yamaura, K10508 Shrum Science Centre,  
 778.782.4980

Students wishing to major in any Department of Mathematics programs should seek advice early from the departmental advisor.

Students are also invited to apply to enter the co-operative education program in mathematics, which integrates work experience with academic study. For further details, see "Co-operative Education" on page 212 and also consult the mathematical sciences co-op co-ordinator, Ms. F. Solano, in EAA 1205, telephone 778.782.7632, fsolano@sfu.ca.

The major and minor programs listed below lead to a bachelor of science degree in the Faculty of Science. Students interested in a bachelor of arts degree in mathematics or should see "Mathematics Program" on page 127 in the *Faculty of Arts and Social Sciences* section.

Students interested in mathematics may also wish to consider related programs detailed under the section headings applied mathematics, mathematics and computing, mathematical physics, management and systems science, statistics and actuarial science.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for more information.

## Minimum Grade Requirements

Students wishing to enrol for Department of Mathematics courses must have obtained grades of C- or better in prerequisite courses. Some courses may require higher prerequisite grades. Check the course's Calendar description for details (see "Mathematics MATH" on page 417). Students will not normally be permitted to enrol in any course for which a D grade or lower was obtained in any prerequisite. No student may complete, for further credit, any course offered by the Department of Mathematics which is a prerequisite for a course the student has already completed with a grade of C- or higher, without permission of the department.

Major or honors students must satisfy Faculty of Science requirements, general University CGPA, and unit requirements.

## Computing Recommendation

Some experience with a high level programming language is recommended by the beginning of the second year.

## Open Workshops

Some introductory and service courses are organized through the department's open workshops. In addition to regularly scheduled lectures, students enrolled in these courses are encouraged to come to the workshops for assistance any time during posted working hours. At the workshop students have the opportunity to meet with the co-ordinator, teaching assistants and other students, and work together to understand mathematics in a friendly and helpful environment.

## Burnaby Campus

Quantitative Courses Support Workshop (4100 Academic Quadrangle) – FAN X99, MATH 190

Algebra Workshop (4135 Academic Quadrangle) – MATH 100, 232, 240, MACM 201

Calculus Workshop (4110 Academic Quadrangle) – MATH 150, 151, 152, 251

Applied Calculus Workshop (K9503 Shrum Science Centre) – MATH 154, 155, 157, 158

**Simon Fraser University Surrey**

Introductory Mathematics Workshop – FAN X99,  
MATH 100, 130, 190, MACM 201

Pure Calculus Workshop – MATH 150, 151, 152, 251

Applied Calculus and Algebra Workshop – MATH  
154, 155, 157, 232, 240

**Beginning Level Requirements**

**Students who do not have the appropriate prerequisites as listed below must successfully complete the Quantitative Placement Test in order to enrol in a mathematics course.**

Students who are unsure of their level of preparation, or who completed their last mathematics course more than five years ago, are also strongly encouraged to complete the Quantitative Placement Test. Students should make certain that they discuss the test results with the mathematics advisor. Please check the Department of Mathematics website for further information at <http://math.sfu.ca/ugrad/qtest>

The first mathematics courses prerequisites follow.

**MATH 100,**

BC principles of mathematics 11 (or equivalent) with a grade of at least B- or Simon Fraser University FAN X99 with a grade of at least B-, or achieving a satisfactory grade on the Simon Fraser University Quantitative Placement Test.

**MATH 113, 190**

BC principles of mathematics 11 (or equivalent) with a grade of at least B- or Simon Fraser University FAN X99 with a grade of at least C, or achieving a satisfactory grade on the Simon Fraser University Quantitative Placement Test.

**MATH 151**

BC principles of mathematics 12 (or equivalent) with a grade of at least A; or MATH 100 with a grade of at least B-, or achieving a satisfactory grade on the Simon Fraser University Calculus Readiness Test.

**MATH 150, 154, 157**

BC principles of mathematics 12 (or equivalent) with a grade of at least B; or MATH 100 with a grade of at least C, or achieving a satisfactory grade on the Simon Fraser University Calculus Readiness Test.

**Applied Mathematics Major Program**

Applied mathematics traditionally consists of areas of mathematics which are closely related to the physical sciences and engineering, but nowadays sophisticated mathematical tools are used across many disciplines, and applied mathematics has become increasingly computationally oriented.

The Department of Mathematics offers applied mathematics major and honors programs; applied mathematics courses are also excellent choices for students concentrating in other sciences or engineering. Students interested in applied mathematics may also wish to consider the joint honors program in mathematics and computer science, and the mathematical physics honors program, both of which include a substantial number of applied mathematics courses.

Required courses are as follows.

**Lower Division Requirements**

Students complete either  
CMPT 126-3 Introduction to Computer Science and Programming

or both of

CMPT 120-3 Introduction to Computing Science and Programming I

CMPT 125-3 Introduction to Computing Science and Programming II

and all of

MACM 202-4 Mathematical Modeling and Computation

MATH 152-3 Calculus II

MATH 240-3 Algebra I: Linear Algebra

MATH 242-3 Introduction to Analysis I

MATH 251-3 Calculus III

MATH 252-3 Vector Calculus

PHYS 211-3 Intermediate Mechanics

STAT 270-3 Introduction to Probability and Statistics

and one of

MATH 150-4 Calculus I with Review

MATH 151-3 Calculus I

and one of

PHYS 120-3 Modern Physics and Mechanics

PHYS 125-3 Mechanics and Special Relativity

and one of

PHYS 121-3 Optics, Electricity and Magnetism

PHYS 126-3 Electricity, Magnetism and Light

**Note:** With a C grade or better in the relevant course, these substitutions are permitted: MATH 154 or 157 for MATH 151; MATH 155 or 158 for MATH 152. Also, with a B grade or better, MATH 232 for MATH 240. However, where possible, students are strongly encouraged to complete MATH 151, 152 and 240.

**Upper Division Requirements**

Students complete all of

MACM 316-3 Numerical Analysis I

MATH 310-3 Introduction to Ordinary Differential Equations

MATH 314-3 Boundary Value Problems

MATH 320-3 Introduction to Analysis II

MATH 322-3 Complex Variables

MATH 418-3 Partial Differential Equations

plus at least one of

MATH 461-3 Continuous Mathematical Models

MATH 462-3 Fluid Dynamics

plus at least two of

MACM 401-3 Introduction to Computer Algebra

MACM 409-3 Numerical Linear Algebra and Optimization

MACM 416-3 Numerical Analysis II

MATH 308-3 Introduction to Optimization

MATH 309-3 Continuous Optimization

MATH 338-3 Advanced Linear Algebra

MATH 343-3 Applied Discrete Mathematics

MATH 345-3 Introduction to Graph Theory

MATH 419-3 Linear Analysis

MATH 424-3 Complex Analysis

MATH 425-3 Real Analysis

MATH 461-3 Continuous Mathematical Models

MATH 462-3 Fluid Dynamics

MATH 467-3 Dynamical Systems

MATH 470-3 Variational Calculus

MATH 495-3 Topics in Applied Mathematics

PHYS 413-3 Advanced Mechanics

STAT 380-3 Introduction to Stochastic Processes

Plus one additional upper division MATH or MACM course or any pre-approved quantitative upper division course offered by the Faculties of Applied Sciences, Arts and Social Sciences, Business Administration or Science. This course, if other than MATH or MACM, must be pre-approved by a department advisor. Students are encouraged to explore the option of completing courses outside the department and to discuss possibilities with a department advisor.

Choices from the third group ("at least two of") must not include the course used to satisfy the second group ("at least one of"). At least three of the courses used to satisfy the upper division requirements must be at the 400 division.

**Other Requirements**

Of the total 120 units required for the major, at least 12 must be completed outside the Faculty of Science including at least six in the Faculty of Arts and Social Sciences. At least 44 of the units must be at the upper division. In the courses used to satisfy the upper division requirements, a grade point average (GPA) of at least 2.00 is required. In addition, University regulations require a cumulative GPA of at least 2.00 and an upper division GPA of at least 2.00. These averages are computed on all courses completed at the University. See "Grade Point Averages Needed for Graduation" on page 31.

**Applied Mathematics Honors Program****Lower Division Requirements**

Students complete either

CMPT 126-3 Introduction to Computer Science and Programming

or both of

CMPT 120-3 Introduction to Computing Science and Programming I

CMPT 125-3 Introduction to Computing Science and Programming II

and all of

CMPT 225-3 Data Structures and Programming

MACM 202-4 Mathematical Modeling and Computation

MATH 152-3 Calculus II

MATH 240-3 Algebra I: Linear Algebra

MATH 242-3 Introduction to Analysis I

MATH 251-3 Calculus III

MATH 252-3 Vector Calculus

PHYS 125-3 Mechanics and Special Relativity

PHYS 126-3 Electricity, Magnetism and Light

PHYS 211-3 Intermediate Mechanics

STAT 270-3 Introduction to Probability and Statistics

and one of

MATH 150-4 Calculus I with Review

MATH 151-3 Calculus I

**Note:** With a C grade or better in the relevant course, these substitutions are permitted: MATH 154 or 157 for MATH 151; MATH 155 or 158 for MATH 152. Also, with a B grade or better, MATH 232 for 240. However, where possible, students are strongly encouraged to complete MATH 151, 152 and 240.

**Upper Division Requirements**

Students complete all of

MACM 316-3 Numerical Analysis I

MATH 310-3 Introduction to Ordinary Differential Equations

MATH 314-3 Boundary Value Problems

MATH 320-3 Introduction to Analysis II

MATH 322-3 Complex Variables

MATH 418-3 Partial Differential Equations

at least one of

MATH 461-3 Continuous Mathematical Models

MATH 462-3 Fluid Dynamics

plus at least one of

MACM 416-3 Numerical Analysis II

MATH 467-3 Dynamical Systems

plus at least six additional courses chosen from

MACM 401-3 Introduction to Computer Algebra

MACM 409-3 Numerical Linear Algebra and

Optimization

MACM 416-3 Numerical Analysis II

MATH 308-3 Introduction to Optimization

MATH 309-3 Continuous Optimization

MATH 338-3 Advanced Linear Algebra

MATH 343-3 Applied Discrete Mathematics

MATH 345-3 Introduction to Graph Theory

MATH 419-3 Linear Analysis

MATH 424-3 Complex Analysis  
 MATH 425-3 Real Analysis  
 MATH 461-3 Continuous Mathematical Models  
 MATH 462-3 Fluid Dynamics  
 MATH 467-3 Dynamical Systems  
 MATH 470-3 Variational Calculus  
 MATH 495-3 Topics in Applied Mathematics  
 PHYS 395-3 Computational Physics  
 PHYS 413-3 Advanced Mechanics  
 PHYS 484-3 Nonlinear Physics  
 STAT 380-3 Introduction to Stochastic Processes

Two additional upper division courses in MATH or MACM or any pre-approved quantitative upper division courses offered by the Faculties of Applied Sciences, Arts and Social Sciences, Business Administration or Science. For this purpose a course, if not MATH or MACM, must be pre-approved by an advisor. Students should explore the option of completing courses outside the department and should discuss possibilities with an advisor.

Choices from the fourth group ("at least six of") must not include the courses used to satisfy the second and third groups ("at least one of"). At least five of the courses used to satisfy the upper division requirements must be at the 400 division.

### Other Requirements

Of the total 132 units required for honors, at least 12 must be completed outside the Faculty of Science including at least six in the Faculty of Arts and Social Sciences. At least 60 of the units must be at the upper division. A cumulative grade point average (CGPA) of at least 3.00 and an upper division grade point average of at least 3.00 are required. These averages are computed on all courses completed at the University. If both averages are at least 3.50, the designation 'first class' applies.

## Industrial Mathematics

### Advisors

Dr. M. Monagan, K10501 Shrum Science Centre,  
 778.782.4279/5617, monagan@cecm.sfu.ca

Dr. R. Pyke, Room 14–260 Central City Tower, Simon  
 Fraser University Surrey, 778.782.7530,  
 rpyke@sfu.ca

Dr. J.F. Williams, K10524 Shrum Science Centre,  
 778.782.4544, jfw@math.sfu.ca

This program prepares students for careers in industry. Students choose a program area from either operations research and applied statistics (offered at Simon Fraser University Surrey), scientific computing or discrete mathematics (both offered at the main Burnaby campus).

In addition to the program requirements set out below, general university and Faculty of Science regulations must be met.

### Major Program

The requirements are divided into three parts: a common core for all students, an area requirement and a minor or interdisciplinary requirement. The minor requirement is additional to those specified, and is stipulated by relevant departments or schools.

### Lower Division Core Requirements

Students complete either  
 CMPT 126-3 Introduction to Computer Science and  
 Programming

or both of

CMPT120-3 Introduction to Computer Science and  
 Programming I

CMPT 125-3 Introduction to Computer Science and  
 Programming II

plus all of

CMPT 225-3 Data Structures and Programming

MACM 101-3 Discrete Mathematics I  
 MATH 152-3 Calculus II\*  
 MATH 240-3 Algebra I: Linear Algebra\*  
 MATH 251-3 Calculus III  
 STAT 270-3 Introduction to Probability and Statistics  
 STAT 285-3 Intermediate Probability and Statistics  
 and one of  
 MATH 150-4 Calculus I with Review\*  
 MATH 151-3 Calculus I\*

\*with a grade of C or better, these substitutions are permitted: MATH 154 or 157 for 151 (or 150); MATH 155 or 158 for MATH 152. With a grade of B or better, MATH 232 for MATH 240.

### Area Requirements

Students complete the requirements for one of option A, B or C.

*Option A: Operations Research and Applied Statistics*  
 (offered at Simon Fraser University Surrey)

For this option, students must complete all of  
 MACM 201-3 Discrete Mathematics II  
 MATH 208-3 Introduction to Operations Research  
 MATH 308-3 Introduction to Optimization  
 MATH 309-3 Continuous Optimization  
 MATH 348-3 Probabilistic Models in Operations  
 Research  
 MATH 402-4 Industrial Mathematics  
 MATH 408-3 Discrete Optimization  
 MATH 448-3 Network Flows  
 STAT 350-3 Linear Models in Applied Statistics  
 STAT 380-3 Introduction to Stochastic Processes  
 TECH 101-3 Communication, Teamwork and  
 Collaborative Process

plus at least two additional courses from Table I  
 below, and at least one from Table II below.

### Table I

ACMA 445-3 Loss Models: Estimation and Selection\*  
 BUEC 433-5 Forecasting in Business and Economics  
 STAT 390-3 Selected Topics in Probability and  
 Statistics  
 STAT 400-3 Data Analysis  
 STAT 402-3 Generalized Linear and Nonlinear  
 Modelling  
 STAT 410-3 Statistical Analysis of Sample Surveys  
 STAT 430-3 Statistical Design and Analysis of  
 Experiments  
 STAT 460-3 Bayesian Statistics  
 STAT 490-3 Selected Topics in Probability and  
 Statistics

\*students must meet the entry requirements for the  
 actuarial science program to enrol in this course

### Table II

CMPT 305-3 Computer Simulation and Modelling  
 CMPT 307-3 Data Structures and Algorithms  
 MACM 316-3 Numerical Analysis I  
 MATH 343-3 Applied Discrete Mathematics  
 MATH 345-3 Introduction to Graph Theory  
 MATH 445-3 Graph Theory

### Interdisciplinary Requirement for Option A

Students complete at least 15 units from application  
 areas with advisor approval. Application courses are  
 chosen from: ACMA, BUEC, BUS, ECON, MACM,  
 MATH, REM and STAT. Courses used for the Option  
 A major cannot be used for this requirement. If the  
 industrial mathematics major is completed as part of a  
 second bachelor's degree, then the interdisciplinary  
 requirement may be waived if the previous degree  
 contains an approved major. Approvals are given  
 individually. Those majors that are approved will not  
 be limited to the disciplines listed above.

*Option B: Scientific Computing*  
 (offered at the main Burnaby campus)

For this option students must complete all of  
 MACM 202-4 Mathematical Modeling and  
 Computation  
 MACM 316-3 Numerical Analysis I

MACM 409-3 Numerical Linear Algebra and  
 Optimization  
 MATH 252-3 Vector Calculus  
 MATH 308-3 Introduction to Optimization  
 MATH 310-3 Introduction to Differential Equations  
 MATH 314-3 Boundary Value Problems  
 MATH 402-4 Industrial Mathematics Project  
 MATH 418-3 Partial Differential Equations

plus two of

MACM 416-3 Numerical Analysis II  
 MATH 309-3 Continuous Optimization  
 MATH 320-3 Introduction to Analysis II  
 MATH 322-3 Complex Variables  
 MATH 462-3 Fluid Dynamics  
 MATH 467-3 Dynamical Systems  
 MATH 470-3 Variation Calculus

plus two additional courses from Table II below.

*Option C: Discrete Mathematics*  
 (offered at the main Burnaby campus)

For this option, students must complete all of  
 MACM 201-3 Discrete Mathematics II  
 MACM 202-4 Mathematical Modeling and  
 Computation  
 MACM 316-3 Numerical Analysis I  
 MATH 308-3 Introduction to Optimization  
 MATH 310-3 Introduction to Differential Equations  
 MATH 340-3 Algebra II: Rings and Fields  
 MATH 343-3 Applied Discrete Mathematics  
 MATH 345-3 Introduction to Graph Theory

plus two of

MACM 401-3 Introduction to Computational Algebra  
 MACM 442-3 Cryptography  
 MATH 408-3 Discrete Optimization  
 MATH 447-4 Coding Theory

plus two additional courses from Table III below.

### Table III

CMPT 305-3 Computer Simulation and Modelling  
 CMPT 307-3 Data Structures and Algorithms  
 CMPT 361-3 Introduction to Computer Graphics  
 CMPT 405-3 Design and Analysis of Computing  
 Algorithms  
 CMPT 461-3 Advanced Computer Graphics  
 MACM 316-3 Numerical Analysis I  
 MACM 401-3 Introduction to Computational Algebra  
 MACM 409-3 Numerical Linear Algebra  
 MACM 416-3 Numerical Analysis II  
 MACM 442-3 Cryptography  
 MATH 309-3 Continuous Optimization  
 MATH 310-3 Introduction to Ordinary Differential  
 Equations  
 MATH 314-3 Boundary Value Problems  
 MATH 320-3 Introduction to Analysis II  
 MATH 322-3 complex Variables  
 MATH 338-3 Advanced Linear Algebra  
 MATH 340-3 Algebra II: Rings and Fields  
 MATH 342-3 Elementary Number Theory  
 MATH 343-3 Applied Discrete Mathematics  
 MATH 345-3 Introduction to Graph Theory  
 MATH 348-3 Probability Models in Operations  
 Research  
 MATH 408-3 Discrete Optimization  
 MATH 418-3 Partial Differential Equations  
 MATH 438-3 Linear Algebra  
 MATH 443-3 Combinatorial Theory  
 MATH 445-3 Graph Theory  
 MATH 447-4 Coding Theory  
 MATH 448-3 Network Flows  
 MATH 461-3 Continuous Mathematical Models  
 MATH 462-3 Fluid Dynamics  
 MATH 467-3 Dynamical Systems  
 MATH 470-3 Variational Calculus  
 PHYS 395-3 Computational Physics

### Minor Requirement for Options B and C

Students complete the requirements for a minor in  
 economics, engineering or computing science, or any  
 Faculty of Science minor (e.g. biological sciences,

chemistry, earth science, physics, statistics). Students must be accepted into the minor program of the relevant department or school. Upper division courses used to satisfy the major requirements cannot also be used to satisfy the minor. If the industrial mathematics major is completed as part of a second bachelor's degree, then the minor requirement may be waived if the previous degree contains an approved major. Approvals will be given individually and those approved majors will not be limited to the disciplines listed in the minor.

#### Other Requirements for all Options

Students complete the Faculty of Science major program requirements as outlined on page 181. Computing courses completed in the industrial mathematics major will count towards the 12 unit requirement from outside of the Faculty of Science.

#### Honors Program

Students must satisfy the requirements for the major program, and complete additional course work (see below) for a total of 132 units.

Students complete

MATH 242-3 Introduction to Analysis I

and one of

MATH 320-3 Introduction to Analysis II

MATH 340-3 Algebra II: Rings and Fields

and additional Table III courses to total 48 upper division units, of which at least four courses must be at the 400 division. One upper division MATH course that is not shown in Table I may be substituted.

Students must also fulfil the Faculty of Science honors requirements (see page 181). Note that the only requirement which is not already met by the industrial mathematics honors (including the minor requirement) as shown above is the minimum grade point average requirement of 3.00 in the subject area.

#### Co-operative Education

Industrial mathematics students are encouraged to enter co-operative education which integrates work experience with academic study. Augmenting academic studies with co-op work/study is an advantage that employers consistently affirm. To obtain a co-op degree designation, students are required to complete four co-op work terms while completing the academic requirements for the degree. See "Co-operative Education" on page 212.

### Mathematics Major and Honors Programs

#### Lower Division Requirements

Students complete either

CMPT 126-3 Introduction to Computer Science and Programming

or both of

CMPT 120-3 Introduction to Computing Science and Programming I

CMPT 125-3 Introduction to Computing Science and Programming II

and all of

MACM 101-3 Discrete Mathematics I

MACM 201-3 Discrete Mathematics II

MACM 202-4 Mathematical Modeling and Computation

MATH 152-3 Calculus II

MATH 240-3 Algebra I: Linear Algebra

MATH 242-3 Introduction to Analysis I

MATH 251-3 Calculus III

STAT 270-3 Introduction to Probability and Statistics

and one of

MATH 150-4 Calculus I with Review

MATH 151-3 Calculus I

**Note:** With a C grade or better in the relevant course, these substitutions are permitted: MATH 154 or 157 for MATH 151, MATH 155 or 158 for MATH 152. Also, with a B grade or better, MATH 232 for 240. However, where possible, students are strongly encouraged to complete MATH 151, 152 and 240.

#### Upper Division Requirements

All students must complete

MATH 340-3 Algebra II: Rings and Fields

and at least one from each of the following four groups of courses.

MATH 308-3 Introduction to Optimization

MATH 343-3 Applied Discrete Mathematics

MATH 345-3 Introduction to Graph Theory

and one of

MATH 320-3 Introduction to Analysis II

MATH 322-3 Complex Variables

and one of

MATH 338-3 Advanced Linear Algebra

MATH 341-3 Algebra III: Groups

MATH 342-3 Elementary Number Theory

and one of

MATH 310-3 Introduction to Ordinary Differential Equations

MACM 316-3 Numerical Analysis I

BSc mathematics majors must obtain at least 30 units in upper division mathematics (MATH), or mathematics/computing science (MACM), or PHYS 413, or from the following list of statistics (STAT) courses: STAT 330, 350, 380, 402, 430, 450 and 460.

Of the required 30 unit minimum total for the MATH major, at least 24 must be MATH or MACM courses. At least three used for this requirement must be at the 400 division, of which at least two must be 400 division MATH or MACM. A directed studies, job practicum, or honors essay course cannot be used to fulfil the 400 division requirement.

#### Honors Program Specific Requirements

In addition to the major program requirements, honors complete CMPT 225, MATH 252 and 341, and obtain at least 15 additional units in upper division mathematics (MATH), or mathematics/computing science (MACM) courses, PHYS 413, or from the list of approved STAT courses listed under *Upper Division Requirements for the Mathematics Major Program*. Of this minimum 48 upper division units, at least 36 must come from MATH or MACM courses.

At least five courses used to satisfy the 48 unit requirement must be 400 division, of which at least three must be 400 division MATH or MACM courses. Directed studies, job practicum or honors essay courses may not be used to fulfil this requirement.

**Note:** Major or honors math students are advised to complete an upper division statistics course and an upper division MACM or CMPT course.

#### Major and Honors Program Electives

Students obtain at least six units in courses offered by the Faculty of Science outside the Departments of Mathematics, and Statistics and Actuarial Science. Students must obtain at least six units in Faculty of Arts and Social Sciences courses. (The two required CMPT courses and the Faculty of Arts and Social Sciences six unit requirement fulfil the Faculty of Science requirement that students complete 12 units from outside the Faculty of Science.)

Major program students must complete at least 44 upper division units, including the requirements for the major. Honors program students must complete at least 60 upper division units, including the requirements for honors.

### Mathematics Minor Program

Students completing a minor in mathematics are subject to the general regulations of the faculty in which they are enrolled. Students normally are required by the Department of Mathematics to

- obtain at least 12 mathematics units (MATH 100, 190, 197 or 198 may not be included) or mathematics/computing science (MACM) courses numbered 101-299 inclusive. These courses normally will include MATH 150 or 151 (or 154 or 157), 152 (or 155 or 158), and 232 or 240.
- obtain at least 15 units of upper division mathematics (MATH), or mathematics/computing science (MACM).

### Mathematics and Computing Science (MACM) Joint Major and Joint Honors Program

MACM joint major and joint honors programs are offered co-operatively by the Department of Mathematics and the School of Computing Science. In general, students are expected to meet the requirements of both the department and the school with respect to admission, continuation and graduation requirements.

#### Lower Division Requirements

##### Joint Major Program

Students complete either

CMPT 126-3 Introduction to Computer Science and Programming

or both of

CMPT 120-3 Introduction to Computing Science and Programming I

CMPT 125-3 Introduction to Computing Science and Programming II

and all of

CMPT 150-3 Introduction to Computer Design

CMPT 225-3 Data Structures and Programming

MACM 101-3 Discrete Mathematics I

MACM 201-3 Discrete Mathematics II

MATH 152-3 Calculus II

MATH 240-3 Algebra I: Linear Algebra

MATH 242-3 Introduction to Analysis

MATH 251-3 Calculus III

STAT 270-3 Introduction to Probability and Statistics

plus one of

MATH 150-4 Calculus I with Review

MATH 151-3 Calculus I

plus one of

CMPT 275-4 Software Engineering

MACM 202-4 Mathematical Modeling and Computation

**Note:** With a C grade or better in relevant course, these substitutions are permitted: MATH 154 or 157 for MATH 151; MATH 155 or 158 for MATH 152. Also, with a B grade or better, MATH 232 for MATH 240. However, where possible, students are strongly encouraged to complete MATH 151, 152 and 240.

In addition, students must complete writing and breadth requirements in accordance with the regulations of both the department and the school.

#### Lower Division Requirements

##### Joint Honors Program

Students pursuing the MACM joint honors program must complete both of the following courses as well as the remaining requirements of the MACM major.

CMPT 275-4 Software Engineering

MACM 202-4 Mathematical Modeling and Computation

**Upper Division Requirements****Joint Major Program**

Students complete the following core requirements.

All of  
 CMPT 307-3 Data Structures and Algorithms  
 MACM 316-3 Numerical Analysis I  
 MATH 340-3 Algebra II: Rings and Fields  
 plus one of  
 CMPT 300-3 Operating Systems I  
 CMPT 371-3 Data Communications and Networking  
 CMPT 379-3 Principles of Compiler Design

plus one of  
 MATH 308-3 Introduction to Optimization  
 MATH 310-3 Introduction to Ordinary Differential Equations

MATH 345-3 Introduction to Graph Theory

Additional work is required to total 21 upper division MATH and 24 upper division CMPT units including core requirements. MACM are counted in an alternating fashion toward the MATH and CMPT requirements, starting with the first MACM course completed, counting toward either MATH or CMPT. Twelve units must be 400 division or higher, including at least three units each of CMPT and MATH.

**Upper Division Requirements****Joint Honors Program**

Students complete these core requirements.

All of  
 CMPT 307-3 Data Structures and Algorithms  
 CMPT 405-3 Design and Analysis of Computing Algorithms  
 MACM 316-3 Numerical Analysis I  
 MATH 310-3 Introduction to Ordinary Differential Equations  
 MATH 340-3 Algebra II: Rings and Fields  
 MATH 345-3 Introduction to Graph Theory

plus one of  
 CMPT 308-3 Computability and Complexity  
 MACM 300-3 Introduction to Formal Languages and Automata with Applications

plus one of  
 CMPT 300-3 Operating Systems I  
 CMPT 371-3 Data Communications and Networking

plus one of  
 CMPT 361-3 Introduction to Computer Graphics  
 CMPT 379-3 Principles of Compiler Design

plus one of  
 MATH 308-3 Introduction to Optimization  
 MATH 309-3 Continuous Optimization

Additional course work is required to total 27 upper division MATH units and 30 upper division CMPT units including core requirements. MACM courses are counted in an alternating fashion towards the MATH and CMPT requirements, starting with the first MACM course completed counting towards either MATH or CMPT. A total of 18 units must be completed at the 400 division or higher, including at least six units each of CMPT and MATH credit.

**General Requirements**

The program is subject to Faculty of Science and University regulations. Course and prerequisite admission is subject to departmental requirements. MACM major graduation is contingent upon a cumulative grade point average (CGPA) and upper division grade point average (UDGPA) of 2.00 or better. Students must also achieve a 2.00 or better CGPA and UDGPA in each of the CMPT, MACM and MATH designations. Admission, continuation and graduation in the MACM honors is contingent upon 3.00 or better on all relevant GPAs. Faculty of Applied Sciences residency requirements apply to the computing science courses used toward the program.

**Mathematical Physics Honors Program**

This program, offered jointly with the Department of Physics, consists of theoretical and laboratory physics and applied and pure mathematics courses. See page 205 for details.

**Co-operative Education**

This program integrates work experience with academic study. See "Co-operative Education" on page 212. Contact the mathematical sciences co-op co-ordinator at 778.782.7632, EAA 1205, for admission requirements and information.

**Department of Molecular Biology and Biochemistry**

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**Chair**

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**Professors Emeriti**

R.J. Cushley BSc, MSc, PhD (Alta)

W.R. Richards AB, PhD (Calif)

M.J. Smith BSc (St Mary's, Calif), PhD (Br Col)

**Professors**

D.L. Baillie BSc, MSc (Br Col), PhD (Conn), Canada Research Chair

B.P. Brandhorst AB (Harv), PhD (Calif)

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B.M. Honda BSc (McM), PhD (Br Col)

S. Jones BSc (Brist), MSc (S Fraser), PhD (Sanger)

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D. Sen BA (Camb), MPhil, PhD (Yale)\*

J.L. Thewalt BSc, PhD (S Fraser)\*\*

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M.A. Brockman BA (Beloit), PhD (Harvard)

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P.J. Unrau BSc (McM), PhD (MIT)

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\*joint appointment with chemistry

\*\*joint appointment with physics

\*\*\*joint appointment with health sciences

\*\*\*\*joint appointment with biological sciences



honors). In addition, honors may not complete more than 15 research and/or reading units in one term.

### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information.

### Major Program

(120 units)

All students must complete lower and upper division requirements.

#### Lower Division Core Requirements

(52-53 units)

Students complete all of

BISC 101-4 Introduction to Biology

BISC 102-4 Introduction to Biology

BISC 202-3 Genetics

CHEM 121-4 General Chemistry and Laboratory I

CHEM 122-2 General Chemistry II

CHEM 126-2 General Chemistry Laboratory II

CHEM 215-4 Introduction to Analytical Chemistry

CHEM 281-4 Organic Chemistry I

CHEM 282-2 Organic Chemistry II

CHEM 286-2 Organic Chemistry Laboratory II

MBB 222-3 Molecular Biology and Biochemistry

MBB 231-3 Cell Biology and Biochemistry

and one of

CMPT 102-3 Introduction to Scientific Computer Programming

CMPT 110-3 Event-Driven Programming in Visual Basic

CMPT 120-3 Introduction to Computing Science and Programming I

and one of

MATH 150-4 Calculus I with Review

MATH 151-3 Calculus I

MATH 154-3 Calculus I for the Biological Sciences

and one of

MATH 152-3 Calculus II

MATH 155-3 Calculus II for the Biological Sciences

and one of

PHYS 101-3 General Physics I

PHYS 120-3 Modern Physics and Mechanics

PHYS 125-3 Mechanics and Special Relativity

PHYS 140-4 Studio Physics – Mechanics and Modern Physics

and one of

PHYS 102-3 General Physics II

PHYS 121-3 Optics, Electricity and Magnetism

PHYS 126-3 Electricity, Magnetism and Light

PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism

#### Upper Division Core Requirements

(22 units)

Students complete all of

MBB 308-3 Molecular Biology Laboratory

MBB 309W-4 Biochemistry Laboratory

MBB 321-3 Intermediary Metabolism

MBB 322-3 Molecular Physiology

MBB 331-3 Molecular Biology

and one of

CHEM 360-3 Chemical Kinetics and

Thermodynamics

MBB 323-3 Introduction to Physical Biochemistry

and one of

MATH 310-3 Introduction to Ordinary Differential Equations

STAT 201-3 Statistics for the Life Sciences

STAT 270-3 Introduction to Probability and Statistics

Students complete a minimum of five courses which include a minimum of one as indicated by # and a minimum of one as indicated by \*. There is no upper limit on the quantity in this list that can be completed.

MBB 402-3 Molecular Genetics

MBB 420-3 Special Topics in Biochemistry

MBB 421-3 Nucleic Acids#

MBB 422-3 Biomembranes#

MBB 423-3 Protein Structure and Function#

MBB 426-3 Immunology

MBB 432-3 Advanced Molecular Biology Techniques

MBB 435-3 Genomic Biology\*

MBB 436-3 Gene Expression

MBB 437-3 Selected Topics in Signal Transduction

MBB 438-3 Human Molecular Genetics

MBB 440-3 Special Topics in Molecular Biology

MBB 441-3 Bioinformatics\*

MBB 442-3 Proteomics\*

MBB 443-3 Protein Biogenesis and Degradation#

PHYS 433-3 Biological Physics Laboratory

In addition to the above, students must complete enough electives to total 120. Of these 120 units,

- 44 must be upper division

- 12 must be from outside the Faculty of Science, fulfilled as follows: six units from the Faculty of Arts and Social Sciences (excluding EDUC 401-406). Faculty of Applied Sciences courses may be used.

In addition, students should consult the bachelor of science regulations in *Faculty of Science*. See "Requirements for Major" on page 181.

Although many variations are possible, those with BC high school chemistry 12, mathematics 12 and physics 12 (or equivalents) might complete the following typical program.

#### Term 1

BISC 101-4 or 102-4

CHEM 121-4

MATH 150-4, 151-3 or 154-3

PHYS 120-3

#### Term 2

BISC 101-4 or 102-4

CHEM 122-2

CHEM 281-4

MATH 152-3 or 155-3

#### Term 3

CHEM 282-2

CHEM 286-2

MBB 222-3

PHYS 121-3

#### Term 4

BISC 202-3

CHEM 126-2

MBB 231-3

CMPT 102-3, 110-3 or 120-3

#### Levels 5 and 6

MBB 331-3

CHEM 360-3 or MBB 323-3

MATH 310-3 or STAT 201-3 or STAT 270-3

MBB 308-3, 309W-3, 321-3 and 322-3

MBB 432-3

nine units of electives

Total 34 units

#### Levels 7 and 8

15-18 units; 11-16 units of electives Total 29-31 units

### Honors Program

(132 units)

A minimum 3.0 CGPA, 3.0 upper division GPA, and department permission is required for admission. In addition to the major requirements, honors complete one of the following individual study term options.

either all of (option A)

MBB 481-5 Individual Study Semester – Research Design

MBB 482-5 Individual Study Semester – Research Performance

MBB 483-5 Individual Study Semester – Research Reporting

or both of (option B)

MBB 491-5 Undergraduate Research

MBB 492-10 Individual Study Semester\*

\*This may be accomplished by breaking the individual study term project into two consecutive terms.

Students complete 12 units outside the Faculty of Science (including six units in the Faculty of Arts and Social Sciences, but excluding EDUC 401 to 406) and at least 60 upper division units. See "Requirements for Major" on page 181.

### Minor Program

(56-60 units minimum)

#### Lower Division Requirements

(42 units minimum)

Students complete all of

BISC 101-4 General Biology

BISC 102-4 General Biology

CHEM 121-4 General Chemistry and Laboratory I

CHEM 122-2 General Chemistry II

CHEM 126-2 General Chemistry Laboratory II

CHEM 281-4 Organic Chemistry I

CHEM 282-2 Organic Chemistry II

CHEM 286-2 Organic Chemistry Laboratory II

MBB 222-3 Molecular Biology and Biochemistry

MBB 231-3 Cell Biology and Biochemistry

and one of

MATH 150-4 Calculus I with Review

MATH 151-3 Calculus I

MATH 154-3 Calculus I for the Biological Sciences

and one of

MATH 152-3 Calculus II

MATH 155-3 Calculus II for the Biological Sciences

and one of

PHYS 101-3 General Physics I

PHYS 120-3 Modern Physics and Mechanics

and one of

PHYS 102-3 General Physics II

PHYS 121-3 Optics, Electricity and Magnetism

#### Cumulative Grade Point Average Requirement

Students must meet the same criteria as required for the MBB major program with the exception of BISC 202 which is not required for an MBB minor.

#### Upper Division Requirements

(14-18 units)

Students complete five upper division MBB courses (plus any lower division prerequisites) excluding MBB 481, 482, 483 and 492.

### Computing Science and Molecular Biology and Biochemistry Joint Major Program

The School of Computing Science and the Department of Molecular Biology and Biochemistry co-operate in offering this joint major program. The student enrolment, appeals, and graduation processing are handled by either the School of Computing Science in the Faculty of Applied Sciences or the Department of Molecular Biology and Biochemistry in the Faculty of Science.

#### Lower Division Requirements

(63-67 units)

Students complete

CMPT 126-3 Introduction to Computing Science and Programming

or both of

CMPT 120-3 Introduction to Computing Science and Programming I

CMPT 125-3 Introduction to Computing Science and Programming II

and one of

MATH 150-4 Calculus I with Review

MATH 151-3 Calculus I

and all of the following

BISC 101-4 General Biology

BISC 102-4 General Biology

BISC 202-3 Genetics

CHEM 121-4 General Chemistry and Laboratory I

CHEM 122-2 General Chemistry and Laboratory II

CHEM 281-4 Organic Chemistry I

CHEM 282-2 Organic Chemistry II

CMPT 150-3 Introduction to Computer Design

CMPT 225-3 Data Structures and Programming

CMPT 275-4 Software Engineering

MACM 101-3 Discrete Mathematics I

MACM 201-3 Discrete Mathematics II

MATH 152-3 Calculus II

MBB 222-3 Molecular Biology and biochemistry

MBB 231-3 Cell Biology and Biochemistry

STAT 270-3 Introduction to Probability and Statistics

plus one of

PHYS 101-3 General Physics I

PHYS 120-3 Modern Physics and Mechanics

PHYS 125-3 Mechanics and Special Relativity

PHYS 140-4 Studio Physics – Mechanics and Modern Physics

plus one of

PHYS 102-3 General Physics II

PHYS 121-3 Optics, Electricity and Magnetism

PHYS 126-3 Electricity, Magnetism and Light

PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism

Students are strongly encouraged to take CHEM 286.

### Upper Division Requirements

(45 units)

Students complete all of

CMPT 307-3 Data Structures and Algorithms

CMPT 320-3 Social Implications of a Computerized Society

CMPT 354-3 Database Systems and Structures

CMPT 441-3 Introduction to Computational Biology

MBB 308-3 Molecular Biology Laboratory

MBB 331-3 Molecular Biology

MBB 441-3 Bioinformatics

STAT 302-3 Analysis of Experimental and Observational Data

plus one of

CMPT 376W-3 Technical Writing and Group Dynamics

MBB 309W-4 Biochemistry Laboratory

plus at least two of

CMPT 305-3 Computer Simulation and Modeling

CMPT 310-3 Artificial Intelligence Survey

CMPT 340-3 Computers in Biomedicine

CMPT 361-3 Introduction to Computer Graphics

MACM 316-3 Numerical Analysis

MBB 321-3 Intermediary Metabolism

plus at least three of

CMPT 405-3 Design and Analysis of Computing Algorithms

CMPT 413-3 Computational Linguistics

CMPT 419-3 Special Topics in Artificial Intelligence

CMPT 454-3 Database Systems II

MBB 423-3 Protein Structure and Function

MBB 435-3 Genomic Analysis

MBB 438-3 Human Molecular Genetics

MBB 442-3 Proteomics

Students must complete an additional two to three units to total 45 required upper division units.

Students should enrol in co-operative education.

### Electives

Students must complete additional elective courses to bring the degree program total to 120 units.

## Molecular Biology and Biochemistry and Business Administration Joint Major Program

This program offers in-depth combined training that is pertinent to development and administration in emergent biotechnology enterprises. Molecular biology and biochemistry form the scientific and technological underpinnings of today's burgeoning biotechnology field while business administration teaches fundamentals of economics, management, marketing, investment and business law.

Students complete most required courses in both the department (MBB) and the Faculty of Business Administration (FBA). Upon completion, a bachelor of science from the Faculty of Science is awarded. The program requires 70 units in MBB-related courses and 52 in BUS-related ones with little curriculum scheduling flexibility. Students are strongly encouraged to participate in the co-operative education program.

### Lower Division Molecular Biology and Biochemistry Requirements

Students complete all of

BISC 101-4 General Biology

BISC 102-4 General Biology

BISC 202-3 Genetics

CHEM 121-4 General Chemistry and Laboratory I

CHEM 122-2 General Chemistry II

CHEM 281-4 Organic Chemistry I

CHEM 282-2 Organic Chemistry II

MBB 222-3 Molecular Biology and Biochemistry

MBB 231-3 Cellular Biology and Biochemistry

and one of

MATH 150-4 Calculus I with Review

MATH 151-3 Calculus I

MATH 154-3 Calculus I for the Biological Sciences

and one of

MATH 152-3 Calculus II

MATH 155-3 Calculus II for the Biological Sciences

and one of

PHYS 101-3 General Physics I

PHYS 120-3 Modern Physics and Mechanics

PHYS 125-3 Mechanics and Special Relativity

PHYS 140-4 Studio Physics – Mechanics and Modern Physics

and one of

PHYS 102-3 General Physics II

PHYS 121-3 Optics, Electricity and Magnetism

PHYS 126-3 Electricity, Magnetism and Light

PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism

CHEM 286 is strongly recommended.

### Lower Division Business Administration Requirements

Students complete all of

BUS 251-3 Financial Accounting I

BUS 254-3 Managerial Accounting I

BUS 272-3 Behavior in Organizations

ECON 103-4 Principles of Microeconomics

ECON 105-4 Principles of Macroeconomics

and one of

BUEC 232-4 Data and Decisions I

STAT 270-3 Introduction to Probability and Statistics\*\*

and one three-unit PHIL course.

### Upper Division Molecular Biology and Biochemistry Requirements

Students complete all of

MBB 300-1 Special Topics in Biotechnology and Business

MBB 308-3 Molecular Biology Laboratory

MBB 309W-4 Biochemistry Laboratory

MBB 321-3 Intermediary Metabolism

MBB 322-3 Molecular Physiology

MBB 331-3 Molecular Biology

and any two 400 division MBB courses (except MBB 490 and 491), one of which can be fulfilled by completing BISC 303 or 333.

### Upper Division Business Administration Requirements

Students complete all of

BUS 303-3 Business, Society and Ethics

BUS 312-4 Introduction to Finance

BUS 336-4 Data and Decisions II

BUS 343-3 Introduction to Marketing

BUS 360W-3 Business Communication

BUS 393-3 Commercial Law

BUS 477-4 New Venture Planning

and one of

BUS 347-3 Consumer Behavior

another marketing course

and one of

BUS 374-3 Organization Theory

BUS 381-3 Introduction to Human Resource Management

## Computing Science and Molecular Biology and Biochemistry Joint Honors Program

To enter, students must meet the honors program admission requirements as specified by both departments, including seeking permission from the School of Computing Science. In addition to the major program requirements, students also complete six 400 division computing science units beyond those required for the joint major, and six research-related MBB units, which are fulfilled by completing MBB 496.

## Molecular Biology and Biochemistry and Business Administration Joint Honors Program

(132-133 units)

Students must meet the criteria specified by each program (i.e. MBB and Faculty of Business Administration) for entering an honors program, and must seek MBB permission. In addition to the major requirements, MBB/business administration joint honors students must complete

- six units of 400 division BUS or BUEC courses beyond those required for the joint major
- a minimum of six units of research-related MBB courses, which can be fulfilled with MBB 496-6

### Grade Point Averages

For program entry, continuance and graduation, the following grade point averages (GPAs) will be used: minimum 3.00 cumulative GPA; minimum 3.00 GPA for upper division courses.

### Co-operative Education

Majors and honors students may apply to the science co-operative education program which includes up to five work terms during the normal academic program. See "Co-operative Education" on page 212.

# Department of Physics

P8429 Shrum Science Centre, 778.782.4465 Tel,  
778.782.3592 Fax, [www.physics.sfu.ca](http://www.physics.sfu.ca)

## Chair

B.J. Frisken BSc (Qu), MSc (Northwestern),  
PhD (Br Col)

## Professors Emeriti

A.S. Arrott BS (Carnegie Tech), MS (Penn),  
PhD (Carnegie Tech)  
L.E. Ballentine BSc, MSc (Alta), PhD (Camb)  
D.H. Boal BSc, MSc, PhD (Tor)  
B.P. Clayman BSc (Rensselaer), PhD (C'hell)  
J.F. Cochran BSc, MSc (Br Col), PhD (Ill)  
K. Colbow BSc, MSc (McM), PhD (Br Col)  
E.D. Crozier BSc (Tor), PhD (Qu)  
A.E. Curzon BSc (Lond), MSc (Leeds), PhD (Lond),  
ARCS, DIC  
R.H. Enns BSc, PhD (Alta)  
R.F. Frindt BSc (Alta), PhD (Camb), PEng  
S. Gyax Dipl Phys, PhD (Zür)  
B. Heinrich BSc, MSc (Prague), PhD (Czech  
Acad Sc)  
D.J. Huntley BSc, MSc (Br Col), DPhil (Oxf)  
J.C. Irwin BSc, PhD (Br Col)  
L.H. Palmer AA (Sacramento), AB, PhD (Calif)  
K.E. Rieckhoff BSc, MSc, PhD (Br Col)  
K.S. Viswanathan BSc (Madr), MA, PhD (Calif)  
M. Wortis AB, AM, PhD (Harv)

## Professors

J.L. Bechhoefer AB (Harv), MSc, PhD (Chic)  
B.J. Frisken BSc (Qu), MSc (Northwestern),  
PhD (Br Col)  
M.E. Hayden BEng (Sask), MSc, PhD (Br Col)  
I. Herbut BSc (Belgrade), MSc, PhD (Johns H)  
K.L. Kavanagh BSc (Qu), PhD (Cornell)  
G. Kirczenow BSc (WAust), DPhil (Oxf)  
M. Plischke BSc (Montr), MPhil (Yale), PhD (Yeshiva),  
Dean of Science  
P. Mooney AB (Wilson), MA, PhD (Bryn Mawr),  
Canada Research Chair  
J.E. Sonier BSc (WOnt), MSc, PhD (Br Col)  
J.L. Thewalt BSc, PhD (S Fraser)\*  
M.L.W. Thewalt BSc (McM), MSc, PhD (Br Col),  
Burnaby Mountain Endowed Professor  
H.D. Trottier BSc, MSc, PhD (McG)  
M. Vetterli BSc (McG), PhD (McM)  
S. Watkins BSc (Qu), MSc, PhD (S Fraser)

## Associate Professors

D. Broun BSc (WAust), PhD (Camb)  
J.S. Dodge AB (Harv), MA, PhD (Stan)  
E.G. Emberly BSc (Man), PhD (S Fraser), Canada  
Research Chair  
D. O'Neil BSc (New Br), MSc (Alta), PhD (Vic, BC)

## Assistant Professors

N. Forde BSc (Tor), MS, PhD (Chic)  
A.V. Frolov BSc, PhD (Alta)  
P. Haljan BSc (Alta), PhD (Colorado)  
M. Kennett BSc, MSc (Syd), PhD (Prin)  
J. McGuirk BS (Texas), PhD (Stan)  
L.E. Pogossian BSc (Yerevan), MSc (WVrgina),  
PhD (Case W Reserve)  
B. Stelzer BSc (Cape Town), Diplom (Heidelberg),  
PhD (Tor)

## Adjunct Professors

B. Davids BSc (Chic), PhD (Mich State)  
B.K. Jennings BSc (MtAll), MSc, PhD (McM)  
R. Ramaseshan BSc, MSc, PhD (Pune)  
M.R. Scheinfein BS (MIT), MSc, PhD (Cornell)  
R.M. Woloshyn BSc (Man), PhD (NY State)  
M. Zuckermann BA, DPhil (Oxf)

## Associate Members

C. Andreoli, Department of Chemistry  
M. Eikerling, Department of Chemistry  
D. E. Nelson, Department of Archaeology  
E. Palsson, Department of Biology

## Senior Lecturers

N. Alberding BSc (WOnt), PhD (Ill)  
M. Chen BSc (Zhongshan, China), MA, PhD (CUNY)  
A. DeBenedictis BSc (Br Col), MSc (Windsor),  
PhD (S Fraser)  
S. Johnson BS (S Calif), MA, PhD (Roche)

## Advisor

Dr. A. DeBenedictis BSc (Br Col), MSc (Windsor),  
PhD (S Fraser), P9446 Shrum Science Centre,  
778.782.4369, [physhelp@sfu.ca](mailto:physhelp@sfu.ca)

\*joint appointment with biochemistry

## Minimum Grade Requirement

Students wishing to enrol for physics courses must  
obtain a C- grade or better in prerequisite courses.

## Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil  
writing, quantitative and breadth requirements as part  
of their program. See "Writing, Quantitative, and  
Breadth Requirements" on page 7 for information.

## First Year Physics

Four streams of introductory physics are offered.  
Students should choose a stream that is based on  
their interests and abilities, and on requirements for  
their intended program.

## Advanced: PHYS 125/126

Recommended for students intending to major in  
physics or applied mathematics as well as for most  
engineering students. Prerequisite: a grade of 'A' in  
both Physics 12 and Principles of Mathematics 12, or  
equivalent. MATH 151/152 are corequisites.

## Standard: PHYS 120/121

General, introductory physics for non-life science  
students. MATH 151/152 are corequisites.

## Life Sciences: PHYS 101/102

Recommended for students who wish to specialize in  
bioscience, kinesiology or other life sciences. MATH  
154/155 are corequisites.

## Studio Physics: PHYS 140/141

Offered only at the Surrey campus, this covers the  
same material as PHYS 120/121 plus PHYS 131 but  
in a more interactive, combined lecture-lab  
environment. MATH 151/152 are corequisites.

The content of all four streams is similar, although  
each demands different levels of mathematical  
sophistication and problem-solving. The lab  
component is incorporated into PHYS 140/141 but is  
completed as a separate course for the other  
streams. The courses count as duplicates so students  
may switch from one stream to another between  
terms or during the first three weeks of the term.

Students interested in pursuing a physics degree  
should complete PHYS 125/126 because this stream  
offers the best preparation. However, PHYS 120/121  
or PHYS 140/141 should be adequate. Students who  
achieve B grades or better in PHYS 101/102 should  
be able to continue in physics. All potential physics  
students should consult a physics advisor as early as  
possible to discuss their program.

## Open Workshops

PHYS 100, 101 and 102 have tutorials that are held in  
an open workshop format with unstructured periods.  
Each week teaching assistants are available to  
answer questions and help with assignments.

## Computer Skills

Some students become proficient in a high-level  
programming language such as those taught in  
CMPT 102 through self-study. Such individuals  
should consult the physics advisor.

## Recommended Programs

The recommended schedules for all physics  
programs can be found on the web at  
<http://physics.sfu.ca/teaching/undergrad/programs>.

## Applied Physics Major Program

This BSc program offers a solid physics background  
combined with the applied aspects of physics  
necessary for careers in high technology industries.  
Students should enrol in the co-op program to acquire  
valuable industrial experience.

## Lower Division Requirements

(54 units)

Students complete all of  
CHEM 121-4 General Chemistry and Laboratory I  
CHEM 122-2 General Chemistry II  
CHEM 126-2 General Chemistry Laboratory II  
CMPT 102-3 Introduction to Scientific Computer  
Programming  
CMPT 150-3 Introduction to Computer Design  
CMPT 250-3 Introduction to Computer Architecture  
MATH 152-3 Calculus II†  
MATH 251-3 Calculus III  
MATH 252-3 Vector Calculus  
PHYS 131-2 Physics Laboratory I\*  
PHYS 211-3 Intermediate Mechanics  
PHYS 231-3 Physics Laboratory II  
PHYS 233-2 Physics Laboratory III  
PHYS 255-3 Vibrations and Waves  
PHYS 285-3 Introduction to Relativity and Quantum  
Mechanics

and one of  
MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I

and one of  
MATH 232-3 Applied Linear Algebra  
MATH 240-3 Algebra I: Linear Algebra

and one of  
PHYS 120-3 Mechanics and Modern Physics  
PHYS 125-3 Mechanics and Special Relativity†  
PHYS 140-4 Studio Physics – Mechanics and Modern  
Physics\*

and one of  
PHYS 121-3 Optics, Electricity and Magnetism  
PHYS 126-3 Electricity, Magnetism and Light†  
PHYS 141-4 Studio Physics – Optics, Electricity and  
Magnetism\*

\*students with credit for PHYS 140 and 141 are not  
required to complete PHYS 131

†recommended

## Upper Division Requirements

(36 units)

MATH 310-3 Introduction to Ordinary Differential  
Equations  
PHYS 321-3 Intermediate Electricity and Magnetism  
PHYS 326-4 Electronics and Instrumentation  
PHYS 332W-4 Optics Laboratory  
PHYS 344-3 Thermal Physics  
PHYS 385-3 Quantum Mechanics I  
PHYS 421-3 Electromagnetic Waves  
PHYS 455-3 Modern Optics

and 10 units selected from  
MACM 316-3 Numerical Analysis I (or PHYS 395†)  
NUSC 341-3 Introduction to Radiochemistry  
NUSC 346-2 Radiochemistry Laboratory  
PHYS 365-3 Semiconductor Device Physics  
PHYS 430-4 Digital Electronics and Interfacing  
PHYS 431-4 Advanced Physics Laboratory I  
PHYS 465-3 Solid State Physics

†recommended

**Other Requirements**

Please see “Requirements for Major” on page 181.

**Biological Physics Major Program**

This program is for students who are interested in using physical approaches to tackle biological problems. Students should speak with an advisor as soon as possible to schedule their programs.

**Lower Division Requirements**

(64 units)

Students complete all of  
 BISC 101-4 General Biology  
 BISC 102-4 General Biology  
 BISC 202-3 Genetics  
 CHEM 121-4 General Chemistry and Laboratory I  
 CHEM 122-2 General Chemistry II  
 CHEM 281-4 Organic Chemistry  
 CHEM 282-2 Organic Chemistry II  
 MATH 152-3 Calculus II  
 MATH 251-3 Calculus III  
 MATH 252-3 Vector Calculus  
 MBB 222-3 Molecular Biology and Biochemistry  
 MBB 231-3 Cellular Biology and Biochemistry  
 PHYS 211-3 Intermediate Mechanics  
 PHYS 231-3 Physics Laboratory II  
 PHYS 255-3 Vibrations and Waves

and one of  
 MATH 150-4 Calculus I with Review  
 MATH 151-3 Calculus I

and one of  
 MATH 232-3 Applied Linear Algebra  
 MATH 240-3 Algebra I: Linear Algebra  
 and one of  
 CHEM 260-4 Atoms, Molecules, Spectroscopy  
 PHYS 285-3 Introduction to Relativity and Quantum Mechanics

and one of  
 PHYS 101-3 Physics for the Life Sciences I  
 PHYS 120-3 Mechanics and Modern Physics  
 PHYS 125-3 Mechanics and Special Relativity†  
 PHYS 140-4 Studio Physics – Mechanics and Modern Physics\*

and one of  
 PHYS 102-3 Physics for the Life Sciences II  
 PHYS 121-3 Optics, Electricity and Magnetism  
 PHYS 126-3 Electricity, Magnetism and Light†  
 PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism\*†

and one of  
 PHYS 130-2 Physics for the Life Sciences Laboratory  
 PHYS 131-2 Physics Laboratory I\*

\*students with credit for PHYS 140 and 141 are not required to complete PHYS 131

†recommended

**Upper Division Requirements**

(40 units)

Students complete all of  
 MATH 310-3 Introduction to Ordinary Differential Equations  
 MBB 309W-4 Biochemistry Laboratory  
 MBB 322-3 Molecular Physiology  
 MBB 331-3 Molecular Biology  
 PHYS 321-3 Intermediate Electricity and Magnetism  
 PHYS 347-3 Introduction to Biological Physics  
 PHYS 385-3 Quantum Mechanics I  
 PHYS 433-3 Biological Physics Laboratory

and one of  
 CHEM 360-3 Thermodynamics and Chemical Kinetics  
 MBB 323-3 Introduction to Physical Biochemistry  
 PHYS 344-3 Thermal Physics

and four other upper division MBB or PHYS courses. MATH 462 may be included amongst these four. The following courses are suggested.

MBB 308-3 Molecular Biology Laboratory  
 MBB 321-3 Intermediary Metabolism  
 MBB 413-2 Physical Biochemistry Laboratory  
 MBB 421-3 Nucleic Acids  
 MBB 422-3 Biomembranes  
 MBB 423-3 Protein Structure and Function  
 MBB 441-3 Bioinformatics  
 MBB 442-3 Proteomics  
 PHYS 492-3 Special Topics in Physics  
 PHYS 413-3 Advanced Mechanics  
 PHYS 445-3 Statistical Physics  
 PHYS 455-3 Modern Optics  
 PHYS 484-3 Nonlinear Physics  
 MATH 462-3 Fluid Dynamics

**Chemical Physics Major Program**

This program is offered jointly by the Departments of Chemistry and Physics. Entry requires permission of both. Students are strongly encouraged to complete at least three lower division computing science units.

**Lower Division Requirements**

(57 units)

Students complete all of  
 CHEM 121-4 General Chemistry and Laboratory I  
 CHEM 122-2 General Chemistry II  
 CHEM 126-2 General Chemistry Laboratory II  
 CHEM 215-4 Introduction to Analytical Chemistry  
 CHEM 230-3 Inorganic Chemistry  
 CHEM 236W-3 Inorganic Chemistry Laboratory  
 CHEM 281-4 Organic Chemistry I  
 MATH 152-3 Calculus II  
 MATH 251-3 Calculus III  
 MATH 252-3 Vector Calculus  
 PHYS 131-2 Physics Laboratory I\*  
 PHYS 211-3 Intermediate Mechanics  
 PHYS 231-3 Physics Laboratory II  
 PHYS 255-3 Vibrations and Waves

and one of  
 MATH 150-4 Calculus I with Review  
 MATH 151-3 Calculus I

and one of  
 MATH 232-3 Applied Linear Algebra  
 MATH 240-3 Algebra I: Linear Algebra

and one of  
 CHEM 260-4 Atoms, Molecules, Spectroscopy  
 PHYS 285-3 Introduction to Relativity and Quantum Mechanics

and one of  
 PHYS 120-3 Mechanics and Modern Physics  
 PHYS 125-3 Mechanics and Special Relativity†  
 PHYS 140-4 Studio Physics – Mechanics and Modern Physics\*

and one of  
 PHYS 121-3 Optics, Electricity and Magnetism  
 PHYS 126-3 Electricity, Magnetism and Light†  
 PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism\*

\*students with credit for PHYS 140 and 141 are not required to complete PHYS 131

†recommended

**Upper Division Requirements**

(40 units)

CHEM 340-3 Materials Chemistry  
 CHEM 366W-3 Physical Chemistry Laboratory I  
 CHEM 462-3 Molecular Spectroscopy  
 MATH 310-3 Introduction to Ordinary Differential Equations  
 PHYS 321-3 Intermediate Electricity and Magnetism  
 PHYS 421-3 Electromagnetic Waves

and one of  
 PHYS 326-4 Electronics and Instrumentation  
 PHYS 332W-4 Optics Laboratory\*

and one of  
 CHEM 360-3 Thermodynamics and Chemical Kinetics  
 PHYS 344-3 Thermal Physics

and one of  
 CHEM 460-3 Advanced Physical Chemistry  
 PHYS 445-3 Statistical Physics

and one of  
 CHEM 464-3 Quantum Chemistry  
 PHYS 385-3 Quantum Mechanics I

plus 10 upper division chemistry, nuclear science or physics units chosen to maintain a minimum of 15 upper division units in both chemistry and physics

\*the requirement of PHYS 233 as a prerequisite for PHYS 332 is waived for students in the chemical physics major and honors programs

**Other Requirements**

Please see “Requirements for Major” on page 181.

**Physics Major Program**

This program offers a solid physics background with the opportunity to explore other disciplines. Because of flexibility in upper division physics requirements, students can plan their own upper division to fit individual objectives. Consult an advisor when planning and to have their program approved.

**Lower Division Requirements**

(46 units)

Students complete all of  
 CHEM 121-4 General Chemistry and Laboratory I  
 CHEM 122-2 General Chemistry II  
 CMPT 102-3 Introduction to Scientific Computer Programming  
 MATH 152-3 Calculus II  
 MATH 251-3 Calculus III  
 MATH 252-3 Vector Calculus  
 PHYS 131-2 Physics Laboratory I\*  
 PHYS 211-3 Intermediate Mechanics  
 PHYS 231-3 Physics Laboratory II  
 PHYS 233-2 Physics Laboratory III  
 PHYS 255-3 Vibrations and Waves  
 PHYS 285-3 Introduction to Relativity and Quantum Mechanics

and one of  
 MATH 150-4 Calculus I with Review  
 MATH 151-3 Calculus I

and one of  
 MATH 232-3 Applied Linear Algebra  
 MATH 240-3 Algebra I: Linear Algebra

and one of  
 PHYS 120-3 Mechanics and Modern Physics  
 PHYS 125-3 Mechanics and Special Relativity†  
 PHYS 140-4 Studio Physics – Mechanics and Modern Physics\*

and one of  
 PHYS 121-3 Optics, Electricity and Magnetism  
 PHYS 126-3 Electricity, Magnetism and Light†  
 PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism\*

\*students with credit for PHYS 140 and 141 are not required to complete PHYS 131

†recommended

**Upper Division Requirements**

(31 units)

Students complete all of  
 MATH 310-3 Introduction to Ordinary Differential Equations

PHYS 321-3 Intermediate Electricity and Magnetism  
 PHYS 332W-4 Optics Laboratory  
 PHYS 344-3 Thermal Physics  
 PHYS 385-3 Quantum Mechanics I

In addition, a minimum of 15 other upper division physics units must be completed to satisfy the physics subject area requirements for a major.

### Other Requirements

Please see "Requirements for Major" on page 181.

## Applied Physics Honors Program

This program offers a solid physics background combined with an extensive introduction to the applied aspects necessary for high technology careers. Students have the option of various specialized upper division courses. Enrol in co-op education to acquire industrial experience.

PHYS 432 should be based on an industrially motivated project. An additional second year CMPT course, such as CMPT 212, is recommended. Students considering physics graduate programs should complete PHYS 413, 415 and 445.

### Lower Division Requirements

Requirements are the same as for the applied physics major program.

### Upper Division Requirements

(52 units)

Students complete all of  
 MATH 310-3 Introduction to Ordinary Differential Equations  
 PHYS 321-3 Intermediate Electricity and Magnetism  
 PHYS 326-4 Electronics and Instrumentation  
 PHYS 332W-4 Optics Laboratory  
 PHYS 344-3 Thermal Physics  
 PHYS 384-3 Methods of Theoretical Physics I  
 PHYS 385-3 Quantum Mechanics I  
 PHYS 421-3 Electromagnetic Waves  
 PHYS 431-4 Advanced Physics Laboratory I  
 PHYS 432-5 Undergraduate Honors Thesis  
 PHYS 455-3 Modern Optics  
 PHYS 465-3 Solid State Physics

and 11 additional units chosen from  
 CHEM 340-3 Materials Chemistry (or ENSC 330)  
 MACM 316-3 Numerical Analysis I (or PHYS 395)†  
 ENSC 426-4 High Frequency Electronics  
 ENSC 495-4 Introduction to Microelectronic Fabrication\*

PHYS 365-3 Semiconductor Device Physics  
 PHYS 430-4 Digital Electronics and Interfacing

\*the prerequisite (ENSC 222) can be replaced by PHYS 326

†recommended

### Other Requirements

Please see "Requirements for Honors and Honors First Class" on page 181.

## Biological Physics Honors Program

(15-17 additional upper division units)

Honors program graduates may undertake graduate work in either physics or molecular biology, or related areas, and should choose their courses accordingly.

### Additional Upper Division Requirements

Students complete 15-17 upper division units in addition to the biological physics major program (see "Biological Physics Major Program" on page 204) by

choosing either Option A or Option B as stipulated below.

#### Option A

MBB 481-5 Individual Study Semester – Research Design  
 MBB 482-5 Individual Study Semester– Research Performance  
 MBB 483-5 Individual Study Semester – Research Reporting

#### Option B

PHYS 384-3 Methods of Theoretical Physics I  
 PHYS 415-3 Quantum Mechanics II  
 PHYS 432-5 Undergraduate Honors Thesis  
 PHYS 445-3 Statistical Physics

## Chemical Physics Honors Program

This program is offered jointly by the Departments of Chemistry and Physics. Entry requires permission of both. Honors program graduates may undertake graduate work in either chemistry or physics and should choose their courses accordingly. Students are strongly encouraged to complete at least three lower division computing science units.

### Lower Division Requirements

Requirements are the same as for the chemical physics major program.

### Upper Division Requirements

(51 units)

Students complete all of  
 CHEM 340-3 Materials Chemistry  
 CHEM 366W-2 Physical Chemistry Laboratory I  
 CHEM 462-3 Molecular Spectroscopy  
 MATH 310-3 Introduction to Ordinary Differential Equations  
 PHYS 321-3 Intermediate Electricity and Magnetism  
 PHYS 384-3 Methods of Theoretical Physics I  
 PHYS 415-3 Quantum Mechanics II  
 PHYS 421-3 Electromagnetic Waves

and one of  
 CHEM 360-3 Thermodynamics and Chemical Kinetics  
 PHYS 344-3 Thermal Physics

and one of  
 CHEM 460-3 Advanced Physical Chemistry  
 PHYS 445-3 Statistical Physics

and one of  
 CHEM 464-3 Quantum Chemistry  
 PHYS 385-3 Quantum Mechanics I  
 and one of  
 CHEM 440-3 Solid State Materials Chemistry  
 PHYS 465-3 Solid State Physics

and one of  
 CHEM 481-5 Undergraduate Research  
 PHYS 432-5 Undergraduate Honors Thesis

and one of  
 PHYS 326-4 Electronics and Instrumentation  
 PHYS 332W-4 Optics Laboratory\*

plus upper division chemistry, nuclear science or physics units chosen to bring the total upper division units to 51, and maintain a minimum of 21 upper division units in both chemistry and physics

\*the requirement that PHYS 233 as a prerequisite for PHYS 332 is waived for students in the chemical physics major and honors programs

### Other Requirements

Please see "Requirements for Honors and Honors First Class" on page 181.

## Mathematical Physics Honors Program

This program is offered jointly by the Departments of Mathematics and Physics. Entry requires permission of both. Graduates may undertake graduate work in mathematics or physics depending on interest. Some additional work in either mathematics or physics may be required. Students should speak with an advisor as soon as possible to schedule their programs.

### Lower Division Requirements

(46 units)

Students complete one of  
 CMPT 126-3 Introduction to Computing Science and Programming† (or CMPT 120 and 125)  
 CMPT 102-3 Introduction to Scientific Computer Programming

and all of  
 MATH 152-3 Calculus II  
 MATH 242-3 Introduction to Analysis I  
 MATH 251-3 Calculus III  
 MATH 252-3 Vector Calculus  
 PHYS 131-2 Physics Laboratory I\*  
 PHYS 211-3 Intermediate Mechanics  
 PHYS 231-3 Physics Laboratory II  
 PHYS 233-2 Physics Laboratory III  
 PHYS 255-3 Vibrations and Waves  
 PHYS 285-3 Introduction to Relativity and Quantum Mechanics  
 STAT 270-3 Introduction to Probability and Statistics  
 and one of  
 MATH 150-4 Calculus I with Review  
 MATH 151-3 Calculus I

and one of  
 MATH 232-3 Applied Linear Algebra  
 MATH 240-3 Algebra I: Linear Algebra

and one of  
 PHYS 120-3 Mechanics and Modern Physics  
 PHYS 125-3 Mechanics and Special Relativity†  
 PHYS 140-4 Studio Physics – Mechanics and Modern Physics\*

and one of  
 PHYS 121-3 Optics, Electricity and Magnetism  
 PHYS 126-3 Electricity, Magnetism and Light†  
 PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism\*

\*students with credit for PHYS 140 and 141 are not required to complete PHYS 131

†recommended

### Upper Division Requirements

(58 units)

Students complete all of  
 MACM 316-3 Numerical Analysis I  
 MATH 310-3 Introduction to Ordinary Differential Equations  
 MATH 320-3 Introduction to Analysis II  
 MATH 322-3 Complex Variables  
 MATH 418-3 Partial Differential Equations

and one of  
 MATH 419-3 Linear Analysis  
 MATH 424-3 Complex Analysis  
 MATH 425-3 Real Analysis

and one of  
 MATH 461-3 Continuous Mathematical Models  
 MATH 462-3 Fluid Dynamics  
 MATH 495-3 Selected Topics in Applied Mathematics

and one of  
 MACM 401-3 Introduction to Computer Algebra  
 MACM 416-3 Numerical Analysis II  
 MATH 467-3 Dynamical Systems

and all of  
 PHYS 321-3 Intermediate Electricity and Magnetism

PHYS 332W-4 Optics Laboratory  
 PHYS 344-3 Thermal Physics  
 PHYS 384-3 Methods of Theoretical Physics I  
 PHYS 385-3 Quantum Mechanics I  
 PHYS 413-3 Advanced Mechanics  
 PHYS 415-3 Quantum Mechanics II  
 PHYS 421-3 Electromagnetic Waves  
 PHYS 445-3 Statistical Physics

and two of

PHYS 390-3 Introduction to Astrophysics  
 PHYS 432-5 Undergraduate Honors Thesis  
 PHYS 455-3 Modern Optics  
 PHYS 465-3 Solid State Physics  
 PHYS 484-3 Nonlinear Physics  
 PHYS 485-3 Particle Physics  
 PHYS 490-3 General Relativity and Gravitation

### Other Requirements

Please see "Requirements for Honors and Honors First Class" on page 181. CHEM 121 and 122 should be included among the elective courses.

### Physics Honors Program

This program provides an in-depth understanding of basic physics in preparation for post-graduate study in physics and closely related disciplines. A grade average of B or higher is required to graduate.

### Lower Division Requirements

Requirements are the same as for the physics major.

### Upper Division Requirements

(52 units)

Students complete all of  
 MATH 310-3 Introduction to Ordinary Differential Equations  
 PHYS 321-3 Intermediate Electricity and Magnetism  
 PHYS 332W-4 Optics Laboratory  
 PHYS 344-3 Thermal Physics  
 PHYS 384-3 Methods of Theoretical Physics I  
 PHYS 385-3 Quantum Mechanics I  
 PHYS 413-3 Advanced Mechanics  
 PHYS 415-3 Quantum Mechanics II  
 PHYS 421-3 Electromagnetic Waves  
 PHYS 431-4 Advanced Physics Laboratory I  
 PHYS 432-5 Undergraduate Honors Thesis  
 PHYS 445-3 Statistical Physics

and at least nine units chosen from

PHYS 390-3 Introduction to Astrophysics  
 PHYS 455-3 Modern Optics  
 PHYS 465-3 Solid State Physics  
 PHYS 485-3 Particle Physics  
 PHYS 490-3 General Relativity and Gravitation

and at least three units chosen from

PHYS 326-4 Electronics and Instrumentation  
 PHYS 380-3 Introduction to Subatomic Physics  
 PHYS 395-3 Computational Physics  
 PHYS 430-4 Digital Electronics and Interfacing  
 PHYS 484-3 Nonlinear Physics

### Other Requirements

Please see "Requirements for Honors and Honors First Class" on page 181.

### Nuclear Science Minor Program

This minor program is offered jointly with the Department of Chemistry. See page 192 for details.

### Physics Minor Program

Students complete a minimum of 14 upper division physics units in courses numbered 300 and above, together with all the prerequisites. Students will select a reasonable list of courses that must be approved by the Department of Physics.

### Co-operative Education

Ms. N. Yano, Faculty of Science co-op co-ordinator,  
 P9441 Shrum Science Centre, 778.782.4654,  
 nmyano@sfu.ca

Co-op combines work experience with academic studies. The student spends alternate terms on campus and in study related jobs. Please see "Co-operative Education" on page 212.

## Department of Statistics and Actuarial Science

K10545 Shrum Science Centre, 778.782.3803 Tel,  
 778.782.4368 Fax, www.stat.sfu.ca, stat@sfu.ca

#### Chair

R.A. Lockhart BSc (Br Col), MA, PhD (Calif)

#### Professor Emeritus

M.A. Stephens BSc (Brist), AM (Harv), PhD (Tor)

#### Professors

C.B. Dean BSc (Sask), MMath, PhD (Wat), Burnaby Mountain Endowed Professor  
 R.A. Lockhart BSc (Br Col), MA, PhD (Calif)  
 T.M. Loughin BSc (Rensselaer), MSc (N Carolina), PhD (Iowa State)  
 R.D. Routledge BSc (Qu), MSc (Alta), PhD (Dal)  
 C.J. Schwarz BSc, MMath (Wat), MSc, PhD (Manit)  
 T.B. Swartz BMath (Wat), MSc, PhD (Tor)  
 B. Tang BS, MS (Peking), PhD (Wat)  
 S. Thompson AB (Calif), MS, PhD (Oregon State), Gordon M. Shrum Chair in Science

#### Associate Professors

J. Graham BSc, MSc (Br Col), MSc, PhD (Wash)  
 J. Hu BS, MS (Peking), PhD (Wat)  
 W.B. McNeney BSc, MSc (Br Col), MSc, PhD (Wash)  
 G. Parker BSc, MSc (Laval), PhD (H-W)

#### Assistant Professors

R. Altman BA (Wat), MS (Cornell), PhD (Br Col)  
 D. Bingham BSc (C'dia), MSc (Car), PhD (S Fraser), Canada Research Chair  
 D.A. Campbell BSc (S Fraser), MSc (Dal), PhD (McG)  
 J. Cao BSc (Beijing Normal), PhD (McG)  
 Y. Lu BSc (Fudan), MSc, PhD (C'dia)  
 C. Tsai BS (Ntnl Taiwan), MS (Ntnl Chiao-Tung Taiwan), MS (Wisc), PhD (Wat)  
 L. Zeng BSc (Nankai), MSc, PhD (Wat)\*

#### Adjunct Professors

R.F. Balshaw BSc, MSc (Manit), PhD (S Fraser)  
 S.G. Banneheka MSc (Lond), MSc, PhD (S Fraser)  
 P. Gill BSc, MSc (PunjAg), PhD (IIT Kanpur)  
 F. He BSc, MSc (Nanjing Forest), MSc (Chin Acad Sc), MSc (Vic, BC), PhD (Montr)  
 N.W. Hengartner BSc (Laval), MMath (Wat), PhD (Calif)  
 J.J. Spinelli BSc, MSc, PhD (S Fraser)

#### Associate Member

N. Reilly, Department of Mathematics

#### Senior Lecturer

R. Insley BSc, MSc (Br Col)

#### Statistical Consulting Service

I. Bercovitz BSc (Br Col), MSc (Car)  
 M.M. Loughin BA (St Olaf), MS (N Carolina)

\*joint appointment with health sciences

The department maintains a committee of advisors each year. Their office hours are available through the general office and on the department's website at www.stat.sfu.ca. Major students should seek advice early in their academic careers about program planning from these advisors.

The department offers a program within the Faculty of Science leading to a bachelor of science with a major or honors in statistics and a major or honors in actuarial science (see page 138). The department

also offers a statistics minor and a certificate in actuarial mathematics.

The following programs in statistics train students, not only in the analysis of large data sets, but also in the design and analysis of scientific experiments and sample surveys. These techniques are applied in a broad range of fields. To fully appreciate their application, it is important that students also gain advanced training in an area of potential application. To this end, major or honors students in statistics complete a minor in a field other than statistics. In keeping with the almost universal applicability of statistical methodology, there are no other restrictions on the selection of a minor. Students should discuss this selection with an advisor early in their program.

Students interested in statistics or in actuarial science may consider the following related programs: mathematics and computing science, management and systems science.

### Admission Requirements

#### Actuarial Science

For admission, students must have completed each lower division required course in mathematics and statistics, or its equivalent, with a minimum C+ grade. They must also have completed ACMA 210 with a minimum grade of C+ and have a CGPA of at least 3.0. Students will be selected competitively. Achieving the minimum grade requirements will not guarantee program admission.

The program will only admit 25-30 students each year. Students should apply in the term in which they complete ACMA 210.

#### Management and Systems Science

For major or honors admission, a program-related Simon Fraser University grade point average (GPA) of 2.7 is required. This GPA is based on the lower division courses required for the Management and Systems Science program completed at Simon Fraser University. Admission is competitive and achieving the minimum GPA does not guarantee admission to the program. Please see "Management and Systems Science Program" on page 195.

#### Statistics

Students may be admitted to a statistics major program by direct entry on their university application or by application to the statistics department after they have been admitted. Students applying for a statistics minor must apply to the department. Visit [www.stat.sfu.ca/programmes/statistics/admission-continuation](http://www.stat.sfu.ca/programmes/statistics/admission-continuation) for admittance and continuation requirements.

### Other Requirements

#### Writing, Quantitative, and Breadth Requirements

Students completing degree programs must fulfil writing, quantitative and breadth requirements as part of their program. See "Writing, Quantitative, and Breadth Requirements" on page 7 for information.

#### Courses for Further Credit

No student may complete, for further credit, any course offered by the Department of Statistics and Actuarial Science which is a prerequisite for a course the student has already completed with a grade of C- or higher without permission of the department.

## Computing Recommendation

Some experience with a high level programming language is recommended by the beginning of the second year.

## Non-specialist STAT Courses

The following courses are intended to be particularly accessible to students who are not specializing in statistics: STAT 100, 101, 201, 203, 302, 403.

## Open Workshops

Some introductory and service courses are organized through the department's open workshops. In addition to regularly scheduled lectures, students enrolled in STAT 100, 101, 203, 270, 201, 302 are encouraged to come to the workshops for assistance any time during posted hours. At the workshop students meet with the co-ordinator, teaching assistants and students, and work together to understand mathematics in a friendly and helpful environment. The statistics workshop is held in K9516 Shrum Science Centre (inside K9510).

## Beginning Level Requirements in Statistics

Students considering enrolling in a statistics course who do not have BC high school mathematics 11 (or equivalent) must see the basic math workshop co-ordinator. These students may complete the non-credit basic math course, basic algebra, offered through the Department of Mathematics.

Students who are unsure of their level of preparation are strongly encouraged to complete the free math assessment test at the basic math workshop, K9505 or at Simon Fraser University Vancouver. Be sure to discuss the test results with the lab instructor in the basic math workshop, or her designate.

## Prerequisite Grade Requirement

Students must have obtained a grade of C- or better in prerequisite for courses labelled STAT, and C or better for courses labelled ACMA, offered by the Department of Statistics and Actuarial Science.

## GPA Requirement for Continuation

To continue in the actuarial science or statistics programs, students must maintain a GPA of at least 2.25 on courses labelled MATH, STAT or ACMA.

To continue in management and systems science, students must maintain a CGPA of at least 2.5.

## Faculty of Science Requirements

Students must satisfy the Faculty of Science upper division credit, breadth and grade point average requirements.

## Credit for Statistics Courses

Credit for STAT courses can depend on the order that the courses are completed. There are three kinds of courses offered.

- Introductory courses STAT 100
- Service courses STAT 101, 201, 203, 301, 302, 403.
- Mainstream courses STAT 270, 285, 300, 330, 350, 380, 400, 410, 430, 450, 460.

Upon completing any service or mainstream course, credit may not be subsequently obtained for STAT 100.

Upon completing any mainstream course, credit may not be obtained for any service course. An exception to this rule is that both STAT 302 and STAT 403 may be completed for credit after having completed STAT 270.

## Accreditation of Courses

The Statistical Society of Canada has accredited certain courses within the department for partial fulfilment of the educational requirements for the

associate statistician (AStat) designation. The list of accredited courses is available at [www.ssc.ca/accreditation/courses\\_e.html](http://www.ssc.ca/accreditation/courses_e.html). Please contact the department for details. Further information on the professional statistician (PStat) and associate statistician (AStat) designations is available at [www.ssc.ca](http://www.ssc.ca).

## Actuarial Science Major Program

Actuarial science majors must achieve a cumulative grade point average (CGPA) of 2.50 or better to graduate.

Students must obtain credit for the following courses.

### Lower Division Requirements

Students complete all of  
ACMA 210-3 Mathematics of Compound Interest  
ECON 103-4 Principles of Microeconomics  
ECON 105-4 Principles of Macroeconomics  
MATH 152-3 Calculus II  
MATH 251-3 Calculus III  
STAT 270-3 Introduction to Probability and Statistics  
STAT 285-3 Intermediate Probability and Statistics

and one of  
MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I

and one of  
MATH 232-3 Elementary Linear Algebra  
MATH 240-3 Algebra I: Linear Algebra\*

plus two of  
BUS 207-3 Managerial Economics  
BUS 251-3 Financial Accounting  
BUS 254-3 Managerial Accounting  
ECON 210-3 Money and Banking  
ECON 290-3 Canadian Microeconomics  
ECON 291-3 Canadian Macroeconomics

plus two CMPT courses. CMPT 120 and 125 are recommended, or CMPT 126 and any other CMPT course is recommended.

plus two ENGL or PHIL courses

\*recommended

### Upper Division Requirements

Students complete both of  
ACMA 320-5 Actuarial Mathematics I  
STAT 330-3 Introduction to Mathematical Statistics

#### List 1

plus four of the following list 1 courses  
ACMA 315-3 Credibility Theory  
ACMA 335-3 Risk Theory  
ACMA 425-3 Actuarial Mathematics II  
ACMA 445-3 Loss Models: Estimation and Selection  
STAT 450-3 Statistical Theory

#### List 2

plus four of the following list 2 courses (at least one must be ACMA 465, 470 or 475)  
ACMA 395-3 Special Topics in Actuarial Science  
ACMA 465-3 Mathematics of Demography  
ACMA 470-3 Property and Casualty Insurance  
ACMA 475-3 Theory of Pension  
ACMA 490-3 Selected Topics in Actuarial Science  
ACMA 495-3 Directed Studies in Actuarial Science  
BUS 312-4 Introduction to Finance  
BUS 315-4 Investments  
BUS 316-3 Derivative Securities  
BUS 360-3 Business Communication  
BUS 410-3 Financial Institutions  
BUS 413-4 Corporate Finance  
BUS 419-3 Advanced Derivative Securities  
ECON 301-4 Intermediate Microeconomic Theory  
ECON 305-5 Intermediate Macroeconomic Theory  
MACM 316-3 Numerical Analysis I  
MATH 308-3 Linear Programming

MATH 310-3 Introduction to Ordinary Differential Equations  
STAT 350-3 Linear Models in Applied Statistics  
STAT 380-3 Introduction to Stochastic Processes

Certain elective courses are pre-approved courses for Valuation by Educational Experience (VEE) units from the Society of Actuaries. Information is available at [www.soa.org](http://www.soa.org)

To satisfy Faculty of Science requirements, students complete additional upper division credit to total 44 units. Job practicum courses, STAT 302 and 403 may not be used to fulfil this requirement. Under University regulations, students must complete at least 120 units to receive the major degree.

## Statistics Major Program

### Lower Division Requirements

#### Computing Science

Students complete one of  
CMPT-125-3 Introduction to Computing Science and Programming II  
CMPT 126-3 Introduction to Computer Science and Programming

#### Mathematics

Students complete one of  
MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences  
MATH 157-3 Calculus for the Social Sciences I

plus one of  
MATH 152-3 Calculus II  
MATH 155-3 Calculus II for the Biological Sciences  
MATH 158-3 Calculus for the Social Sciences II

plus one of  
MATH 232-3 Elementary Linear Algebra  
MATH 240-3 Algebra I: Linear Algebra\*

and students must also complete  
MATH 251-3 Calculus III

#### Statistics

Students complete both of  
STAT 270-3 Introduction to Probability and Statistics  
STAT 285-3 Intermediate Probability and Statistics

\*recommended

### Upper Division Requirements

Students complete all of  
STAT 330-3 Introduction to Mathematical Statistical  
STAT 350-3 Linear Models in Applied Statistics  
STAT 402-3 Generalized Linear and Nonlinear Modelling  
STAT 410-3 Statistical Analysis of Sample Surveys  
STAT 430-3 Statistical Design and Analysis of Experiments  
STAT 450-3 Statistical Theory

plus four additional upper division courses labelled ACMA, MACM, MATH or STAT, excluding STAT 301, 302 and 403.\*

\*consult a departmental advisor before selecting these courses. It is recommended that the four additional upper division courses be selected from STAT 300, 380, 400, 460, 490, 495 and MACM 316. For honors, these four may not overlap with those used to satisfy the *Additional Mathematics Requirements* and the *Additional Statistics Requirements* as stipulated below.

### Minor Program Requirement

Students are required to complete a minor in a discipline other than statistics. The certificate in actuarial mathematics may fulfil this requirement.

## Actuarial Science Honors Program

See the University and Faculty of Science regulations for required total units and cumulative grade point average (CGPA), and upper division units and upper division grade point average (GPA) for graduation in this program.

Honors students must complete

- the lower and upper division requirements for the Actuarial Science major program (see "Actuarial Science Major Program" on page 207)
- the upper division requirements in list 1 for the Actuarial Science major (see "List 1" on page 207)
- seven list 2 courses in the upper division requirements for the Actuarial Science major program (see "List 2" on page 207). At least two of these seven courses must be from ACMA 465, 470, 475 or 490.

## Statistics Honors Program

A bachelor of science with honors in statistics requires 132 units. Please see "Requirements for Major" on page 181 for further breadth, upper division credit, and other requirements.

In addition to the statistics major program's lower division, upper division and minor program requirements (see above), candidates for a statistics honors degree must complete the following.

### Additional Mathematics Requirements

Students complete all of  
MATH 242-3 Introduction to Analysis  
MATH 320-3 Advanced Calculus of One Variable  
MATH 322-3 Complex Variables

plus one of  
MATH 338-3 Advanced Linear Algebra  
MATH 340-3 Algebra II: Rings and Fields  
MATH 341-3 Algebra III: Groups

### Additional Statistics Requirements

Students complete all of  
STAT 380-3 Introduction to Stochastic Processes  
STAT 460-3 Decision Analysis and Bayesian Inference

## Statistics Minor Program

Statistics minor candidates are subject to the general regulations of the faculty in which they are enrolled. In addition, students will be required to obtain credit for the following courses.

### Mathematics Requirements

Students complete one of  
MATH 150-4 Calculus I with Review  
MATH 151-3 Calculus I  
MATH 154-3 Calculus I for the Biological Sciences  
MATH 157-3 Calculus for the Social Sciences I

and one of  
MATH 152-3 Calculus II  
MATH 155-3 Calculus II for the Biological Sciences  
MATH 158-3 Calculus for the Social Sciences II

and one of  
MATH 232-3 Applied Linear Algebra  
MATH 240-3 Algebra I: Linear Algebra

and students must also complete  
MATH 251-3 Calculus III

### Statistics Requirements

Students complete both of  
STAT 270-3 Introduction to Probability and Statistics  
STAT 285-3 Intermediate Probability and Statistics

and at least five of the following courses.  
ACMA 315-3 Credibility Theory and Loss Distributions

ACMA 320-3 Actuarial Mathematics I  
ACMA 335-3 Risk Theory  
ACMA 445-3 Survival Models  
ACMA 490-3 Special Topics in Actuarial Science  
STAT 300-3 Statistics Communication  
STAT 330-3 Introduction to Mathematical Statistics\*  
STAT 350-3 Linear Models in Applied Statistics\*  
STAT 380-3 Introduction to Stochastic Processes  
STAT 400-3 Data Analysis  
STAT 402-3 Generalized Linear and Nonlinear Modelling  
STAT 410-3 Statistical Analysis of Sample Surveys  
STAT 430-3 Statistical Design and Analysis of Experiments  
STAT 450-3 Statistical Theory  
STAT 460-3 Decision Analysis and Bayesian Inference  
STAT 490-3 Special Topics in Probability and Statistics  
STAT 495-3 Directed Studies in Probability and Statistics

\*these core courses are recommended

## Certificate in Actuarial Mathematics

This program provides the mathematical and statistical background for the Society of Actuaries early examinations. Students must already have completed MATH 151, 152 or their equivalents and have knowledge of one programming language.

To obtain the certificate, four lower division courses and eight upper division courses must be completed including all of

ACMA 210-3 Mathematics of Compound Interest  
MATH 232-3 Elementary Linear Algebra  
STAT 270-3 Introduction to Probability and Statistics  
STAT 285-3 Intermediate Probability and Statistics

A 2.50 grade point average (GPA) is required on the eight required upper division courses. These eight courses must be chosen from the list below and must include

ACMA 320-5 Actuarial Mathematics I  
and at least four of  
ACMA 315-3 Credibility Theory and Loss Distributions

ACMA 335-3 Risk Theory  
ACMA 395-3 Special Topics in Actuarial Science  
ACMA 425-3 Actuarial Mathematics II  
ACMA 445-3 Survival Models  
ACMA 490-3 Selected Topics in Actuarial Science  
ACMA 495-3 Directed Studies in Actuarial Science

and at least one of  
MACM 316-3 Numerical Analysis I  
MATH 308-3 Linear Programming  
STAT 330-3 Introduction to Mathematical Statistics  
STAT 350-3 Linear Models in Applied Statistics

Degree holders may receive waivers and/or transfer credit. In all cases, a minimum of nine courses is required while in the certificate program. At least six courses must be completed at Simon Fraser University, of which a minimum of four must be ACMA courses. The graduation GPA will be calculated based only on courses completed at Simon Fraser University.

No student may complete, for further credit, any course offered by the Department of Statistics and Actuarial Science which is a prerequisite for a course the student has already completed with a grade of C- or higher, without permission of the department.

## Management and Systems Science Program

Please see "Management and Systems Science Program" on page 195 for information.

## Co-operative Education

This program integrates work experience with academic study. See "Co-operative Education" on page 212 and consult early with the co-op co-ordinator, Mr. E. Simons, at [esimons@sfu.ca](mailto:esimons@sfu.ca).

## Surrey Science Cohort Programs

Simon Fraser University Surrey, Central City,  
250–13450 102nd Avenue, Surrey, BC V3T 0A3,  
778.782.7486 Tel, 778.782.7488 Fax,  
[www.surrey.sfu.ca/science](http://www.surrey.sfu.ca/science)

Advisor

Mrs. N. Williams BA (S Fraser), 14th floor Central City, 778.782.7486

### Science Year One Program

This cohort program, offered at the Surrey campus, provides a solid foundation for those interested in a science major program offered by any faculty. The program provides a viable avenue to complete the prerequisites for various professional programs such as medicine, optometry, dentistry, pharmacy, veterinary medicine, naturopathic medicine, chiropractic, and dental hygiene. The admission requirements are the same as those of the Faculty of Science. However, students who were admitted to other Simon Fraser University faculties may also enrol, should space allow, but may be required to complete additional courses to augment a deficiency.

This is a full-time two term program beginning in fall.

The program is organized by Faculty of Science disciplines. A list of courses, offered by the program, is published in the fall for future fall and spring terms. For planning, see [www.surrey.sfu.ca/science](http://www.surrey.sfu.ca/science).

Students are free to complete other Simon Fraser University courses (offered at any campus or by distance education) provided that those courses do not conflict with the Science Year One Program.

Students complete both full time Science Year One Program terms before they are eligible to transfer to any other Simon Fraser University program.

The program advisor may approve a modification of the program requirements when appropriate. For example, a student who enters with advance credit for MATH 151 may substitute an elective course offered at Simon Fraser University Surrey. Consult the program advisor for advice.

Students without a declared major are encouraged to discuss their academic goals with the program advisor during their first term.

Students will complete biological sciences and chemistry laboratory sessions at the Burnaby campus.

### Life Sciences Year Two Program

This program, offered at Simon Fraser University Surrey, consists of 200 division science courses in biological sciences (BISC), chemistry (CHEM), molecular biology and biochemistry (MBB) and statistics (STAT). The courses, completed over two consecutive terms (fall and spring), are useful for students intending to major in either biological sciences or molecular biology and biochemistry. The program will also aid those students who wish to apply to professional schools in dentistry, medicine, pharmacy, optometry, veterinary science, and other life sciences areas.

Students who have completed appropriate courses in the Science Year One Program (see "Surrey Science Cohort Programs" on page 208) are guaranteed admission to the Life Sciences Year Two Program.



Other students who have completed appropriate prerequisites by the fall of program admission will be admitted to the Life Sciences Year Two Program depending on available space.

A list of courses, offered by this program, is published in the fall for future fall and spring terms. For planning purposes, this can be viewed at [www.surrey.sfu.ca/science](http://www.surrey.sfu.ca/science).

Students are required to enrol in at least two of the courses offered in this program each term.

Students are free to complete other Simon Fraser University courses (offered at any campus or by distance education) provided that those courses do not conflict with the program.

Note that the lab courses CHEM 126 and 286, and the laboratory component of CHEM 281 use the laboratory facilities at the Burnaby campus because

suitable facilities are not yet available at Simon Fraser University Surrey.

After completion of this program, students will continue their studies as students in the faculty to which they were originally admitted.

Students without a declared major are encouraged to discuss their long term academic goals with the program advisor during their first term.

# Continuing Studies

1300 Lohn Building, West Mall Complex, Burnaby, BC  
V5A 1S6, 778.782.5100 Tel, 778.782.3851 Fax,  
www.sfu.ca/cstudies

Simon Fraser University Vancouver, 515 West  
Hastings Street, Vancouver, BC V6B 5K3,  
778.782.5100 Tel, 778.782.5098 Fax,  
www.sfu.ca/cstudies

Simon Fraser University Surrey, 250–13450 102nd  
Avenue, Surrey, BC V3T 0A3,  
www.sfu.ca/cstudies/surrey

Centre for Online and Distance Education, 1300 Lohn  
Building, West Mall Complex, 778.782.3524 Tel,  
1.800.663.1411 (toll free within BC),  
778.782.4964 Fax, www.sfu.ca/cde

*Dean (pro tem)*

T. Nesbit BA (Open), MA (San Francisco State),  
PhD (Br Col)

*Assistant Dean*

S. O'Connor MBA (S Fraser)

*Program Directors*

A. Aberbach BA (Rutgers), MA (Miami), PhD  
(Florida), Program Director, Seniors Program  
J. Ashworth BA (S Fraser), MEd (Tor), EdD (Br Col),  
Program Director, Dialogue Programs  
S. Burgess BBA (S Fraser), MBA (Br Col), Program  
Director, Management and Professional Programs  
J. Collinge BA, MA, PhD (S Fraser), Dean of  
Continuing Studies (pro tem), Director, Centre for  
Online and Distance Education  
A. Doree BA, MET (Br Col), Program Director, Centre  
for Online and Distance Education  
C. Dunlop BA (Middlebury), MSc, PhD (Br Col),  
Program Director, Research and Evaluation  
M. Fedeles MSc (Kosice), PhD (Br Col), Program  
Director, Continuing Health Education  
P. Gallagher BSc, DipEd (Br Col), PhD (S Fraser),  
Program Director, Science Programs  
D. Jamieson-Noel BA (W Ont), MA, PhD (S Fraser)  
Program Director, Centre for Online and Distance  
Education  
K. Jayasundera BSc (Sri Jayawardenapura), MSc  
(Nat'l Inst Educ, Sri Lanka), PhD (S Fraser), Program  
Director, Centre for Online and Distance Education  
Noni Maté BA (Br Col), Program Director, 7th Floor  
Media  
N. Mathur BA (Car), MEd (Camb Col), PhD (Union),  
Program Director, SFU NOW  
K. McManus BSc (Indiana), MA (Nfld), PhD (Br Col),  
Program Director, Writing and Publishing Program  
R. McTavish BA, MA (S Fraser), Program Director,  
Centre for Online and Distance Education  
S. Nanji BGS (S Fraser), Director, International  
Development and Faculty Engagement, Office of  
International Development  
T. Nesbit BA (Open), MA (San Francisco State), PhD  
(Br Col), Associate Dean and Director, Centre for  
Integrated and Credit Studies  
G. Price, Program Director, City Program  
R. Price BGS, MA (S Fraser), Program Director,  
Integrated Studies Programs  
R. Sanghera BCom, MBA (Vic, BC), Program  
Director, Management and Professional Programs  
W.D. Steinberg, BA (Beijing Normal), MA (Hawaii),  
PhD (Calif) Program Director, International Teaching  
Assistants Program  
Y. Tabin BGS, MA, PhD (S Fraser), Interim Director,  
Centre for Online and Distance Education  
J. Whately BA (Chapman Coll), MA, PhD (S Fraser),  
Program Director, Centre for Online and Distance  
Education

C. Wood, BA, MA (S Fraser) Program Director,  
English Language and Culture Program  
Y. Wosk BA (Br Col), MA (Yeshiva, NY), PhD  
(W Lyon), PhD (Boston), Program Director,  
Interdisciplinary Programs  
J. Zilber BA (S Fraser), LIB (Br Col), Program  
Director, 7th Floor Media

## Part Time Credit Study

### SFU NOW: Nights or Weekends

SFU NOW provides flexible, part-time study leading  
to a degree for working adults through regular Simon  
Fraser University courses offered in the evenings and  
on weekends. For further information regarding  
admissions or enrolment processes, please visit  
www.sfu.ca/cstudies/sfunow or call 778.782.8655.

Students seeking day or evening study for degree  
credit on a part-time basis are governed by the same  
regulations, have the same privileges, and follow the  
same admission and enrolment procedures as  
full-time students. Consult relevant sections of this  
Calendar concerning policies and procedures for  
admission, enrolment, academic programs available,  
program requirements, and current fees. Specific  
details for individual credit programs are available  
from faculties and departments. Students pursuing  
certificates, diplomas, or minors in the evenings at  
Simon Fraser University Surrey, or at Simon Fraser  
University Vancouver should consult academic  
advisors at the Academic Resource Office (Burnaby  
campus), or Information and Registration Services  
(Simon Fraser University Vancouver) or Registrar and  
Information Services (Simon Fraser University  
Surrey), or with the certificate or diploma program  
advisor regarding course availability. Course  
scheduling is available on request at Simon Fraser  
University Vancouver, or Simon Fraser University  
Surrey, please call 778.782.5134.

### Integrated Studies

Sponsored by the Faculty of Arts and Social  
Sciences, Integrated Studies (IS) programs are  
part-time interdisciplinary degree completion  
programs leading to a bachelor of general studies.  
Recognizing and building upon work experience and  
other post-secondary education, the cohort-based IS  
programs differ significantly from typical  
undergraduate programs. They are specifically for  
mid-career adults to complete undergraduate degrees  
in a respectful and intellectually challenging  
environment.

### Liberal and Business Studies

This program's part-time curriculum integrates the  
broad perspectives of a liberal arts education with  
substantial business administration skills. The  
three-year (nine-term) program is offered at Simon  
Fraser University Vancouver and Simon Fraser  
University Surrey on alternate Fridays and Saturdays,  
six times each term. The application deadline for the  
September intake is March 1st. Visit www.sfu.ca/  
integratedstudies or call 778.782.8655.

## Special Audit Student

The course category enables community members to  
access University credit courses as auditors. Those  
interested in completing regular courses but don't  
meet the general admission requirements, or who do  
not desire University admission, may apply as special  
audit students to attend courses. They do not write  
final exams or receive degree credit, records of

attendance, or statements of standing. Obtain a  
special audit application from the Burnaby campus'  
Academic Resource Office, Information and  
Registration Services at Simon Fraser University  
Vancouver, Registrar and Information Services at  
Simon Fraser University Surrey, or from Continuing  
Studies. The form must be signed by the instructor  
during the second week of classes. Special audit fees  
(payable at the Academic Resource Office or  
Information and Registration Services) are calculated  
at one half the normal course fee. Designated seniors  
credit courses are not eligible for special audit.  
Special audit students may not change enrolment  
status after the term begins.

## Seniors Program

This program is an integral part of the University's  
commitment to "help adults achieve their intellectual,  
professional and cultural goals through programs for  
lifelong learning that build on the strengths of the  
University and the resources of the community." Now  
in its 35th year, it offers up to 20 challenging  
non-credit courses at the Vancouver campus. Open to  
anyone 55 years of age and older regardless of  
educational background, courses meet once a week  
during mornings or early afternoon for two hours, and  
run for 7-10 weeks. New courses begin in September,  
January and May. In addition, a seniors program  
non-credit certificate in the liberal art is available.

Senior citizens are also invited to apply for University  
admission to complete courses leading to a degree.  
Once admitted, courses may be completed one at a  
time or through a full course load at any campus. A  
Senior Citizens Certificate is available for those who  
complete 30 units. All credit courses count toward a  
university degree. For full details, please visit our  
website at www.sfu.ca/seniors, or call 778.782.5212.

## Services

### Office of International Development

Through its development projects and programs, this  
office builds sustainable global partnerships. It offers  
support in project identification, preparation,  
management, implementation, and consultancy  
services and tailor-makes contract training programs  
and study tours for international audiences at home or  
abroad. Visit www.sfu.ca/cstudies/international or  
contact 778.782.3987 for more information.

### Research and Evaluation Unit

The unit provides a range of research and evaluation  
services to University program areas and to  
community organizations and businesses.  
Customized courses and workshops in organizational  
research and evaluation techniques are also  
available. Visit www.sfu.ca/cstudies/eval.htm or  
contact 778.782.5071.

### 7th Floor Media

Established in 1987, 7th Floor Media partners with  
local, national and international organizations to  
create compelling educational and cultural content  
applications for interactive media. The unit's focus is  
researching models for effective and engaging  
technology-enhanced learning in both traditional and  
non-traditional educational settings. Visit  
www.7thfloormedia.com or contact 778.782.5271.

## Centre for Online and Distance Education

The centre, working in partnership with academic units, offers courses leading to majors, minors, certificates, diplomas and course work in various degree programs. Students may complete some programs through distance/online study.

The centre offers courses and programs in archaeology, biological sciences, communication, sustainable community development, computing science, contemporary arts, criminology, education, First Nations studies, geography, gerontology, history, humanities, kinesiology, linguistics, philosophy, political science, psychology, sociology and anthropology, statistics, women's studies, and various language courses.

The centre's courses are governed by the same regulations and follow the same admission and enrolment procedures as other university credit courses. Students can enrol in day, evening or distance/online courses, or a combination. For information, visit [www.sfu.ca/cde](http://www.sfu.ca/cde), e-mail [codehelp@sfu.ca](mailto:codehelp@sfu.ca) or telephone 778.782.3524; 1.800.663.1411 (toll free in Canada).

## Non-credit Certificates, Diplomas and Courses

In addition to degree credit, Continuing Studies offers certificates, diplomas and non-credit courses in a variety of disciplines. Developed in association with faculty and professional organizations, and adding to the richness of Continuing Studies' range of courses, workshops and seminars, these programs extend university expertise to the community and bring community knowledge and priorities to the university.

### Certificate Programs

#### Business Analysis

This 18-day certificate has been designed to equip participants with the analytical skill set required for gathering, validating, communicating, documenting and testing business requirements as well as the effective development and implementation of business processes. Courses will cover gap analysis, stakeholder analysis, vendor evaluation analysis, business process modeling, and a number of techniques to document requirements and create business cases. Participants will be able to share ideas and will enhance their business analysis knowledge, including their non-technical skills.

#### Business Writing, Public Relations and Marketing Communication

Designed with the business writer in mind, this program teaches the skills to prepare business documents, from marketing materials to position papers, and from speeches to advertising copy.

#### Career Development Practitioner

These programs (part-time and full-time) prepare graduates to facilitate, implement and plan career development programs for clients with vocational needs. Students will perform tasks such as leading job-finding clubs, developing job placements, providing employment counselling and designing new programs. Graduates will meet the training requirements for international certification as a global career development facilitator (GCDF). This curriculum follows the Canadian standards and guidelines for career development practitioners.

#### Editing

Designed to assist participants to sharpen their eye, clarify their thoughts and learn to write, edit and proofread copy efficiently, this program provides participants with the skills, knowledge and confidence needed to effectively bridge the distance between writers, publishers and readers.

### English Language and Culture

This program, for participants with first languages other than English, emphasizes English speaking, listening, reading and writing skills while gaining a working knowledge of the Canadian cultural context. Participants focus on developing effective English communication skills whether they are international students seeking entrance to a Canadian university, or working professionals pursuing their career path.

### Management

This intensive, part-time program is for individuals to develop their professional skills and master management concepts and techniques. Courses can be completed individually, as well as applied toward the certificate. Students enrolled in the Certificate Program in Management may consider concurrently earning designations with various professional associations, including the Canadian Institute of Management, the Insurance Institute of Canada, the Risk and Insurance Management Society, and the Purchasing Management Association, among others.

### Publishing

Participants work through the fundamentals that are important to all aspects of publishing: writing, editing, proofreading, design, production, and process.

### Sustainable Community Development

Traditional development and growth has come at a price: resource depletion, environmental degradation, climate change, social instability and inequity. A more sustainable approach is required. The certificate in sustainable community development addresses the confusion and ideology around sustainability enabling participants to become effective champions of sustainable development initiatives and projects in their communities. The non-credit program, jointly offered by the Centre for Sustainable Community Development and The City Program, targets a mid-career professional audience. Instructors are leading sustainability experts and practitioners from interdisciplinary backgrounds.

### Technical Communications

Technical communications are an essential component of the *high tech* sector in the creation of documents used to train and support software and hardware users. Also essential in other business sectors and government, technical communicators produce training materials, policy and procedure manuals, and other organizational documents.

### Urban Design

This interdisciplinary program features two- and three-day intensive courses taught by leading urban design practitioners. The program includes theory and practice through lectures, site visits, case studies, group projects, and assignments which enhance mid-career urban design skills. Drawing on the expertise of architects, landscape architects, planners, engineers, economists, sociologists, real estate professionals, lawyers, and the collective knowledge and experiences of the public, this program encourages interdisciplinary discussion on current western Canadian urban design issues.

### The Writer's Studio: Certificate in Creative Writing

Through a blend of courses, readings and working with mentors one-on-one and in groups, this program emphasizes learning in community with other local writers and provides opportunities to develop and finish a significant portion of a manuscript. Participants work on the editorial, design, and production of *Emerge*, an anthology of student work.

### Diploma Programs

#### Diploma in Advanced Interpretation

This program is a multidisciplinary and interdisciplinary program in which student interpreters develop an understanding of cross cultural communication, international politics and economies,

institutional structures and dynamics, social and cultural studies, and linguistic skills. Students have the opportunity to perform interpretation at a variety of public and private sector institutions.

### Advanced Project Management and Development

This comprehensive program for mid-level professionals broadens project management and development training. It provides an overview of the project management life cycle, giving participants exposure to concepts and skills such as developing the project concept, building the business case, creating successful teams, assessing technology options, supporting the project environment and setting up a project management office.

### Diploma in Dialogue and Negotiation

An interactive, experiential program led by experienced faculty, this nine-month program is for mid-career professionals from diverse sectors charged with leading change through negotiating agreements, developing policies and programs and managing conflict. Participants will learn to design and implement agreement-seeking processes.

### Management Skills in Advanced Technology

This program covers the essential skills and knowledge required of managers in technically oriented businesses, and includes study of the principles of human and organizational behavior, resource allocation, demand forecasting, economic and financial analysis, project management, sales and marketing, eBusiness strategies, operations, business planning, writing and public speaking.

### Rehabilitation Management

This program is aimed at individuals working in the health care community who wish to expand or complement their educational background and/or practical expertise. It uses theoretical and practical hands-on activities to deliver a broad-based series of modules in the field of rehabilitation management.

## Non-credit Certificates, Diplomas and Courses

Continuing Studies offers a broad variety of unique non-credit courses, and certificate and diploma programs frequently generate new, complementary short courses, workshops and seminars. All non-credit short courses, workshops, seminars, colloquia, conferences, round-tables and dialogues are developed with the approval and sponsorship of an academic department or academic advisory committee. Most programs have external partners from the public and private sectors, all levels of government and community groups.

The following are the non-credit programs.

Chinese/Korean programs  
City Program  
community education programs  
community outreach and engagement programs  
continuing health education  
Dialogue programs  
English language and culture program  
interdisciplinary programs  
interpretation and translation program  
international teaching assistants seminars  
language programs  
management and professional programs  
Project JAPAN  
science programs  
Seniors Program  
Writing and Publishing Program

For more details about Continuing Studies non-credit courses, visit [www.sfu.ca/cstudies](http://www.sfu.ca/cstudies).

# Co-operative Education

1150 Maggie Benston Student Services Centre,  
778.782.2677 Tel, 778.782.5496 Fax,  
www.sfu.ca/coop, co-op@sfu.ca

Director of Work Integrated Learning  
M. Klemetski

Faculty of Arts and Social Sciences Co-operative  
Education, 6046 Academic Quadrangle,  
778.782.5839 Tel, 778.782.5875 Fax,  
www.sfu.ca/coop/arts, coop-arts@sfu.ca

Faculty of Business Administration Co-operative  
Education, 2313 Lohn Building, West Mall Complex,  
778.782.3619 Tel, 778.782.5922 Fax,  
www.sfu.ca/coop/bus-coop, coop-bus@sfu.ca

School of Communication Co-operative Education,  
K9665 Shrum Science Centre, 778.782.5367 Tel,  
778.782.4024 Fax, www.sfu.ca/coop/cmns-coop,  
coop-cmns@sfu.ca

School of Computing Science Co-operative  
Education, 9830 Applied Science Building,  
778.782.4313 Tel, 778.782.5829 Fax,  
www.sfu.ca/coop/cscop, coop-cmpt@sfu.ca

Faculty of Education Co-operative Education, 6046  
Academic Quadrangle, 778.782.5839 Tel,  
778.782.5875 Fax, www.sfu.ca/coop/arts

School of Engineering Science Co-operative  
Education, 9896 Applied Science Building,  
778.782.5885 Tel, 778.782.4951 Fax,  
www.ensc.sfu.ca/coop, coop-eng@sfu.ca

Faculty of Health Sciences Co-operative Education,  
10706 Blusson Hall, 778.782.7632 Tel,  
778.782.5927 Fax, www.sfu.ca/coop/science,  
email hsci-coop@sfu.ca

Department of Biomedical Physiology and  
Kinesiology Co-operative Education, K9620 Shrum  
Science Centre, 778.782.5712 Tel,  
778.782.3040 Fax, www.sfu.ca/coop/kines,  
coop-kines@sfu.ca

Science and Environment Co-operative Education,  
P9447 Shrum Science Centre, 778.782.4716 Tel,  
778.782.3031 Fax, www.sfu.ca/coop/science,  
coop-science@sfu.ca

School of Interactive Arts and Technology  
Co-operative Education, 2560 Advising Centre,  
Simon Fraser University Surrey, 778.782.7617 Tel,  
778.782.7403 Fax, www.sfu.ca/coop/siat,  
coop-siat@sfu.ca

Simon Fraser University has consistently placed  
within the top five comprehensive Canadian  
universities as ranked by Macleans Magazine. All  
undergraduate Simon Fraser University programs  
have a co-operative education option. A complete list,  
including specific disciplines, is available at  
http://www.sfu.ca/wil/sfuprograms.

## Explore Co-operative Education

In the Co-operative Education Program (co-op)  
students alternate between study terms and paid  
work terms to gain relevant, real-world experience  
before graduation and the advantage to help them  
succeed after university.

A sample outline of a co-op student's academic and  
work schedule is provided below. See "Sample  
Work/Study Sequence" on page 213.

## Admission Requirements

All Canadian citizens, permanent residents, and visa  
students are eligible to participate in the co-op

program. Visa students are eligible for work permits  
which are only valid for co-op employment arranged  
through the co-op program.

Co-op is an optional program, except in the School of  
Engineering Science where it is mandatory within the  
program's structure (see "School of Engineering  
Science" on page 82).

Acceptance into the co-op employment process is  
based on academic performance and entry interviews  
where motivation, interpersonal, and communication  
skills are evaluated. Students must normally have  
45-60 units and a CGPA of at least 2.5 before  
participating in the co-op employment process,  
however all students are admitted on an individual  
basis and the requirements may be flexible.

## Application Procedure

All students (except those in engineering science)  
must apply for admission to the co-op program.  
Students are encouraged to attend an information  
session that is offered at the beginning of every term.  
Visit [www.sfu.ca/coop/apply](http://www.sfu.ca/coop/apply) to view session dates.

After attending an information session, students  
complete the general co-op application form which is  
available at [www.sfu.ca/coop/apply](http://www.sfu.ca/coop/apply).

All students complete the co-op curriculum course  
Bridging Online (BOL), (except those in engineering  
science). Visit [www.sfu.ca/coop/bol](http://www.sfu.ca/coop/bol) for details.

Students are encouraged to contact appropriate  
co-op co-ordinators in their faculty area as early in  
their university career as possible, but no later than  
two terms prior to the first work term.

## Transfer Students

Transfer students should contact the co-op office as  
soon as possible and must complete at least one  
study term before engaging in a work term. Students  
transferring from an approved accredited co-op  
program elsewhere, and who have successfully  
completed work terms, will receive transfer credit for  
those work terms. However, 50% of the student's  
degree program, including work terms, must be  
completed at Simon Fraser University.

## The Employment Process

Once accepted into the co-op program and the  
required Bridging Online curriculum is complete, the  
student can then participate in the employment  
competition. Job opportunities are identified and  
posted through co-op. Students select those for which  
they wish to compete and an interview may ensue. If  
an employment offer is made, the student may accept  
or decline based on contractual obligations and ethics  
associated with progression in the employment  
process. These obligations are made clear to all  
participants at each point in the employment process.

Once the student accepts an employment offer, they  
are required to fulfil that work term obligation and they  
must be enrolled in a co-op practicum course.

Application form submission and/or participation in  
the employment competition indicates a commitment  
to the program and acceptance of the following:

- permission for release to prospective employers of  
copies of transcript
- agreement to enrol in the appropriate co-operative  
education course
- agreement to inform Simon Fraser University of the  
acceptance of any co-op employment position

- agreement to complete the co-op education  
program
- all accepted students are responsible for following  
the policies and procedures outlined in the *Co-op  
Student Handbook* that is posted on the web at  
[www.sfu.ca/coop/student\\_handbook.html](http://www.sfu.ca/coop/student_handbook.html).

## Operation of the Program

The co-op program staff facilitate all pre-employment  
student preparation, negotiate work terms, meet  
employers to establish employer needs, and meet  
with students to monitor progress. They oversee job  
competition and visit students on the job, counsel and  
advise students, and deal with special problems.

## Self-Directed Work Search

Students may also find or create their own work  
terms, locally or abroad. Guidance is provided.  
Self-initiated jobs must be approved by co-op in  
advance of the work term. Students are required to  
enrol in and pay for the appropriate co-op practicum.

## International Opportunities

Students may travel internationally to complete a work  
term. Contact the international co-op co-ordinators at  
[icoop@sfu.ca](mailto:icoop@sfu.ca) for more information.

## Sample Schedule(s)

The next page shows two sample work term and  
study patterns (see "Sample Work/Study Sequence"  
on page 213). An alternating sequence, beginning  
before year three, provides the best learning  
structure. Other combinations can be arranged to  
meet student and employer needs. Students may not  
normally complete their final term at Simon Fraser  
University on a co-op work term.

## Additive Credits

The co-op courses are deemed to have additive  
credit. These units do not count toward the total units  
required for the degree.

## Fees

There is a one-time co-op application fee, with a  
co-op work term course fee charged for each four  
month work practicum in which the student enrolls.  
These fees are tax deductible. For information, see  
"Undergraduate Fees" on page 33.

## Degree Designation

Four work terms must be successfully completed for a  
degree with a co-op designation. Successful  
completion includes a passing grade (comprised of  
both a work project evaluation and performance  
evaluation) and compliance with minimum standards  
of participation. (A work term typically consists of full  
time employment for 13-16 weeks.)

## Certificate Option

Students (except those in engineering science) who  
successfully complete three work terms are eligible  
for a certificate of completion. The same performance  
criteria as noted above are required for the certificate  
option. Students who receive a certificate do not  
receive recognition on their diploma, nor are they  
eligible for further work terms in their current program.

Sample Work/Study Sequence			
	Term I September to December	Term II January to April	Term III May to August
<b>Year 1</b>	study term #1 15 units 15 cumulative units	study term #2 15 units 30 cumulative units Enrol in and complete BOL I	study term #3 15 units 45 cumulative units Co-op program intake BOL II
<b>Year 2</b>	work term #1 3 additive units	study term #4 15 units 60 cumulative units	work term #2 3 additive units
<b>Year 3</b>	study term #5 15 units 75 cumulative units	work term #3 3 additive units	study term #6 15 units 90 cumulative units
<b>Year 4</b>	work term #4 3 additive units	study term #7 15 units 105 cumulative units	study term #8 15 units 120 cumulative units

Sample Work/Study Sequence			
	Term I September to December	Term II January to April	Term III May to August
<b>Year 1</b>	study term #1 15 units 15 cumulative units	study term #2 15 units 30 cumulative units	study term #3 15 units 45 cumulative units Enrol in and complete BOL I
<b>Year 2</b>	study term #4 15 units 60 cumulative units Co-op program intake BOL II	work term #1 3 additive units	work term #2 3 additive units
<b>Year 3</b>	study term #5 15 units 75 cumulative units	study term #6 15 units 90 cumulative units	study term #7 15 units 105 cumulative units
<b>Year 4</b>	work term #3 3 additive units	work term #4 3 additive units	study term #8 15 units 120 cumulative units

UNDERGRADUATE

# Undergraduate Semester in Dialogue

3309 Simon Fraser University Vancouver, 515 West Hastings Street, Vancouver, BC V6B 5K3, 778.782.7893 Tel, 778.782.7892 Fax, www.sfu.ca/dialogue/undergrad, ugsid@sfu.ca

## Director

M.L. Winston BA, MA (Boston), PhD (Kansas)

## Assistant Professor

J. Moore BSc (Br Col), MSc (McG), PhD (Br Col)

The Undergraduate Semester in Dialogue provides a unique opportunity to affirm the role of a university to educate students into productive, creative, well-balanced, thoughtful, and reflective members of society.

The full time, one term, 15 credit Undergraduate Semester in Dialogue will provide intensive

mentoring, strong emphasis on communication skills, an ability to think critically and evaluate effectively, a perspective that encourages discipline bridging, and an opportunity to learn from, and network with, stimulating and accomplished individuals from off-campus.

Each term's program will consist of a core course (DIAL 390W) that will be similar for each offering, and individual topics varying with each offering that are focussed on a subject that encourages broad interdisciplinary approaches (DIAL 391W and 392W).

Admission to the program will be by application. Students should consult with their department prior to their Dialogue term to determine the application of DIAL units to fulfil major, minor or elective course requirements. All three courses must be completed

simultaneously. Prospective students should apply eight months prior to the Dialogue program in which they wish to participate. Admission decisions will be made no later than four months prior to program start. A course outline for each offering of DIAL 390W, 391W and 392W will be available prior to the application deadline.

## Admission Requirements

Students must have completed 45 units prior to beginning the Dialogue program. Individual courses may have other prerequisites. Application forms, information about course content, and other information are available from the program office.

These courses also are eligible to fulfil electives in post baccalaureate diploma programs.

# International Learning Opportunities

SFU International, 1200 Maggie Benston Student Services Centre, 778.782.4232 Tel, 778.782.5880 Fax, [sfu\\_international@sfu.ca](mailto:sfu_international@sfu.ca), [www.sfu.ca/international](http://www.sfu.ca/international)

SFU International is responsible for co-ordinating Simon Fraser University's international activities.

## SFU International

SFU International should be the international student's first stop after moving into accommodation. We offer programs and services such as

- orientation programming for all new international and exchange students
- non-academic advising concerning student visas, employment regulations, and academic and cultural transition issues
- assistance for exchange students with course enrolment
- information about health insurance
- a mentorship program to support personal and cultural transition while fostering intercultural understanding as well as friendships
- workshops and social events to enhance the university experience
- referrals to other services and resources both on and off campus

All international and exchange students, visiting scholars, faculty, and their families are encouraged to contact us. For more information about resources that are available to international students, please visit <http://www.sfu.ca/international>.

## International Exchange Programs

Third and fourth year students may apply for a student exchange. With planning, courses may be used toward a Simon Fraser University degree, and need not extend a student's period of study. Simon Fraser University has over 100 exchange relationships in more than 40 countries around the world and in Canada.

A student may, with the approval of his/her major department(s), undertake a maximum of 30 lower or upper division exchange units while participating in the program. Students who have transferred to Simon Fraser University may count the 30 exchange units in addition to any transfer credit previously awarded.

Formal exchange program students may receive exchange credit for approved courses completed at the host university with a passing grade.

See "International Program" on page 33 for information about international program fees.

### Eligibility for Undergraduate Exchanges

Participants on all exchanges must meet certain academic and residency requirements. All domestic and international exchange participants must

- have completed 36 units (prior to application) with a minimum of 12 units completed at Simon Fraser University prior to application
- have been approved in a program specialization (for example, a major or minor)
- have achieved a minimum 2.67 grade point average in the last two terms (minimum 24 units) or higher as required by partner institutions
- be registered as a Simon Fraser University student at the time of application

The residency requirement for completing a credential at Simon Fraser University may include up to 15 exchange units.

## Field Schools

A field school is a full term program led by a Simon Fraser University faculty member for seven to 12 weeks in the field with some Simon Fraser University course work prior to departure. Field school participants can earn nine to 12 Simon Fraser University units toward their degree and grade point average. All applicants should

- be 19 years of age or older on the day of departure
- have completed 30 units prior to application
- have a minimum 2.5 grade point average

Additional requirements may apply.

For a complete list of exchange destinations, field school details, information sessions, deadlines and application information, visit [www.sfu.ca/international](http://www.sfu.ca/international)

All field schools are subject to cancellation due to insufficient enrolment, departmental funding and availability of instructors, or safety issues in the destination country.

## Czech Republic

### Humanities Field School

summer 2009; offered annually; seven weeks abroad; 11 units completed

This field school in Prague provides in-depth study of European society and culture, literature, art, film and contemporary politics seen through the window of the Czech Republic. The program includes courses in language, film and art history, and political science.

## Fiji

### Archaeology Field School

summer 2010; offered biennially; seven weeks abroad; 12 units completed

This program consists of formal course work at Simon Fraser University and the University of the South Pacific, followed by archaeological field training at excavation sites at the Sigatoka Sand Dunes National Park, one of the most important archaeological sites in Oceania, on the Coral Coast of Viti Levu. Participants will have the opportunity to tour other archaeological sites on Viti Levu as well as to experience the beauty of Fiji and its diverse cultures. Courses will be taught by faculty from Simon Fraser University and the University of the South Pacific.

## France

### Literature and Civilization Field School

summer 2011; offered biennially; seven weeks abroad; nine units completed

Students participating in this field school will spend seven weeks in Tours, France, where they will complete courses in French literature, culture and civilization. In addition to course work, students will have opportunities to participate in a number of cultural activities to enhance the educational experience. They will discover the region through its architecture, cuisine and fine arts. Activities may include cooking classes, theatre performances and local chateaux and winery visits. The program will conclude with four days in Paris.

## Ghana

### Contemporary Arts Field School

summer 2009; offered biennially; eight weeks abroad; 12 units completed

Students explore the development and nature of traditional West African societies, language, family, clans, lineage, gender, marriage, birth, the individual, education, religious/ceremonial, political, and

occupational and economic systems, and values in specific African cultures. They will also be exposed to various West African dance and music styles, forms and structures and their cultural significance. There will be opportunities to interact with local communities, artists and academics, thereby gaining a unique, integrated learning experience with performing and cultural arts in Ghana.

## Greece

### Hellenic Studies Field School

summer 2009; offered annually; 7 weeks abroad; 12 units completed

Students will begin their Greek journey in Athens, Greece's capital, with an exhilarating trip through Plaka to the truly majestic ancient Acropolis. Led by local experts, students will interactively learn Greece's history and culture. Students will spend the remainder of their time on the island of Lesbos, the third largest island on the east coast of Greece. This scenic island, rich with Byzantine, Ottoman and Roman history, is perched between Northern Greece and Turkey on the crystal waters of the Aegean Sea.

## India

### Contemporary Arts Field School

fall 2009; offered biennially; seven weeks abroad; 11 units completed

India offers every visitor a vivid kaleidoscope of landscapes, magnificent historical sites and royal cities, as well as a rich mix of cultures, traditions and artistic innovations. This Field School offers every participant a broad introduction to the Arts and Culture of Contemporary India. Jawaharlal Nehru University (JNU) in New Delhi will be the host university and students will participate in a variety of field trips including several days in Varanasi, India's holiest city, and two weeks in Mumbai, the epicenter of film in India. The program will provide a compelling canvas upon which to discover the Arts and Culture of this great nation and will be a marked non-traditional learning experience for all involved.

## Indonesia

### Environmental and Ecological Education Field School

fall 2010; offered biennially; nine weeks abroad; 12 units completed

From volcano geology to highland agriculture studies to coral reef ecology, students can look forward to a range of course work about the environment. With the current trends in sustainable development, this field school will develop students' environmental perspectives through hands-on field work in an international setting. This program is for students who wish to pursue teacher training, specifically by exploring the environment in relation to international education. Participants will be introduced to methods for promoting environmental and ecological thinking across all grades and all subject areas.

## Italy

### English Field School

fall 2010; offered biennially; eight weeks abroad; 11 units completed

After three weeks of preparatory work on the Burnaby campus, this field school moves for eight weeks to Prato, Italy, which is a city about 15 kilometers outside of Florence. The field school program is centered on the cultural consequences of the Black Death of the mid-fourteenth century. To do this, students engage in interdisciplinary projects while working with the

literature, history, and art of Italy, all of which significantly influenced international European culture, especially the culture of England. The program's goal is to consider one striking example of the ways culture and its institutions adjust, respond and change in times of grave crisis.

**Interactive Arts and Technology Field School**  
summer 2009; offered annually; seven weeks abroad; 15 units completed

This innovative field school, comprised of a team of 12 undergraduate student researchers, will travel to Italy to study and interview design firms and companies across the country. This experience will expose students to the great masters of design, and to diverse theories and application of the design process. Students will apply their knowledge to tangible projects while in Italy, and will spend the fall term analyzing and publishing their work.

## Mexico

**Communication/CPROST Field School**  
spring 2010; offered during the Olympic Games class break (February 13-27, 2010); two weeks duration; four undergraduate units or five graduate units completed

Recent scholarship has shown that there is a strong relationship between technology and culture in the development of industrial clusters. In North America, with a few exceptions, culture is not a major component of the economic life of regional industrial clusters. Mexico has a far more vibrant, and long-established tradition of culture embedded in regional economies. The purpose of this field school is to explore the interrelationships among cultural industries, conventional manufacturing and technology-based industries. Guadalajara, in the state of Jalisco, has a complete spectrum of these industrial clusters, and will be the base for this field school.

## Southeast Asia

**International Studies Field School**  
spring 2010; offered biennially; eight weeks abroad; 12 units completed

This field school will include lectures, tutorials and field trips to museums, archaeological and historical sites, and rural communities. Lectures will provide an overview of society in Thailand and Vietnam with particular reference to minorities and traditional arts.

## Funding for Study Abroad

The following financial aid is available to help with the cost of international study through Simon Fraser University. See "Financial Aid and Awards" on page 36 for more information.

Dr. Rosena Davison Bursary for France Field School  
Embassy of Italy Scholarships  
Institute for the Humanities Travel-Study Award  
International Mobility Awards  
International Scholarship Program  
Barry Macdonald Award in Business Administration  
Barry and E. Anne Macdonald Asia-Canada Awards  
Mitsubishi Canada Limited Student Exchange Award  
Kelly O'Hagan Memorial Bursary  
Pacific Horizons Scholarship Irving K. Barber BC  
SFU Field School Bursary  
SFU Foreign Exchange Bursary  
SFU International Co-operative Education Bursary  
Catherine Tse Bursary for Simon Fraser University Field Schools  
Ben West Student Exchange Annual Award  
Brian Williamson Memorial Award in Archaeology

## Independent Study Abroad

Simon Fraser University students may study and receive transfer credit at institutions which do not have a formal exchange agreement. Students arrange this individually, and must also organize transfer credit using a letter of permission. Finance, tuition, academic and language requirements of the host institution must be met. Contact the host university regarding application and admission

requirements. Information regarding the process for a Simon Fraser University letter of permission (LOP) is available from Student Services (see "Courses at Other Institutions/Letters of Permission" on page 28).

## Dual Degree Programs

A unique dual degree program is offered by Simon Fraser University and Zhejiang University (ZU) in China. Participating students obtain a degree in computing science from both universities. See "Simon Fraser University – Zhejiang University Dual Degree Program" on page 79 for more information.

## Double Degree Program with Monash University, Australia

See "Double Degree Program with Monash University, Australia" on page 90.

## Kefalonia Semester Abroad Program

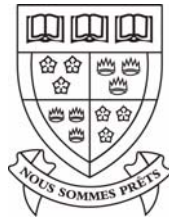
See "Kefalonia Semester Abroad Program" on page 90.

## International Co-operative Education

Over the past several years Simon Fraser University's International Co-operative Education program has placed students around the world on international work terms. The co-op program is open to all students from all faculties. In addition to developing partnerships with employers from government, non-profit, private and public sector organizations, co-op also offers a range of educational resources to ensure optimal learning and smooth transitions from the classroom to the workplace.

For more information, please visit <http://www.sfu.ca/coop/international> or contact the international co-op co-ordinator at [icoop@sfu.ca](mailto:icoop@sfu.ca).





# Graduate Studies

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# Graduate General Regulations

## Academic Honesty

All members of the University community share the responsibility for the academic standards and reputation of the University. Academic honesty is a cornerstone of the development and acquisition of knowledge. Academic honesty is a condition of continued membership in the university community.

Academic dishonesty, like other forms of dishonesty, is misrepresentation with intent to deceive or without regard to the source or the accuracy of statements or findings. Academic dishonesty, in whatever form, is ultimately destructive of the values of the University; it is, furthermore, unfair and discouraging to the majority of students who pursue their studies honestly. Scholarly integrity is required of all members of the University.

The following examples are representative but not exhaustive of activities constituting academic dishonesty: plagiarism (presenting the work of another person as your own); submitting the same work more than once without prior approval; cheating; impersonation; submitting false records or information; stealing or destroying the work of another student; removing, mutilating, misplacing or destroying books or other library material; unauthorized or inappropriate use of computers, calculators and other forms of technology in course work, assignments or examinations.

The University code of academic honesty is contained in policy S10.02 at [www.sfu.ca/policies/students](http://www.sfu.ca/policies/students).

For more information, see "Student Appeals" on page 32.

## Penalties for Acts of Academic Dishonesty

Penalties imposed by the University for academic dishonesty may include one or more of the following: a warning, a verbal or written reprimand, reassessment of work, failure on a particular assignment, failure in a course, denial of admission or readmission, forfeiture of awards or financial assistance, suspension or expulsion from the University.

## Student Conduct

Simon Fraser University is committed to creating a scholarly community characterized by civility, diversity, free inquiry, mutual respect and individual safety. The code of student conduct is intended to define students' basic responsibilities as members of the academic community, to define inappropriate student conduct and to provide procedures and penalties to be invoked and applied if they engage in such unacceptable behavior. Each student is responsible for his/her conduct which affects the University community. The code shall not be construed to unreasonably prohibit peaceful assemblies, demonstrations or free speech.

The following activities are representative but not exhaustive of behaviors constituting misconduct: disruptive or dangerous behavior; behavior which results in damage, destruction and theft of University property or the property of any member of the University; forgery or alteration of University documents or records; misuse of University resources including information (computing) resources; unauthorized entry or presence in University premises; misuse of student disciplinary procedures.

The University code of student conduct is contained in policy S10.01 at [www.sfu.ca/policies/students](http://www.sfu.ca/policies/students).

## Penalties for Acts of Student Misconduct

Penalties imposed by the University for misconduct may include one or more of the following: a verbal or written reprimand, exclusion from specified areas of the University, restitution or other ameliorative measures, suspension or expulsion from the University.

### 1.1 Degrees Offered

Listed under each faculty.

### 1.2 Administration of Graduate Studies

#### Dean of Graduate Studies

The dean is responsible for the general supervision of graduate work at the University and chairs the senate graduate studies committee.

#### Director, Graduate Admissions and Records

The director is responsible for enrolment of students, assessment of fees, maintenance of records, and other administrative duties.

#### Committees

The committees responsible for the supervision of graduate students are the supervisory committee, graduate program committee, the faculty graduate studies committee and the senate graduate studies committee. The functions of these committees in relation to individual students are as follows.

#### Supervisory Committee (see 1.6.4)

The student's supervisory committee helps the student define and develop a program of studies and reports on the student's progress to the graduate program committee. The supervisory committee forms part of the student's final examination committee.

#### Graduate Program Committee

The graduate program committee is responsible for recommending admission, reviewing the student's progress and arranging for the supervision and examination of the student. For most graduate programs, the graduate program committee is the departmental graduate studies committee. In the Faculties of Business Administration and Education, the graduate committee is the faculty graduate studies committee.

#### Faculty Graduate Studies Committee

This committee makes recommendations to the senate graduate studies committee on such matters as awarding of degrees, examining committees for doctoral candidates, changes to established programs and establishment of new programs.

#### Senate Graduate Studies Committee

This committee has the final authority on admissions and the administration of senate regulations which concern graduate work. This committee serves as the graduate program committee for students enrolled under special arrangements.

The administrative officers of the University who are responsible for the supervision of graduate students

are the director, graduate admissions and records, and the dean of graduate studies. They and the chairs of graduate program committees are available to students for consultation.

## Graduate Studies Information

A wide range of additional information on graduate studies at Simon Fraser University may be found on the University's website at [www.sfu.ca/dean-gradstudies](http://www.sfu.ca/dean-gradstudies). In addition, most departments offer publications describing their graduate programs. These are available directly from the departments and are usually posted on the department's web sites.

### 1.3 Admission

#### 1.3.1 General

A student may seek admission to a graduate diploma, master's or doctoral program. A student who is not qualified to enter a specific program may seek admission to the University as a qualifying student under the provisions of paragraph 1.3.6.

For admission to post baccalaureate programs, refer to the undergraduate section of this Calendar.

Before applying for admission, the student should obtain information about admission requirements and procedures. This information can be obtained from the websites of departments and faculties, or by contacting the appropriate program's graduate secretary.

Applicants meeting the minimum University requirements for admission given below are not assured admission into any graduate program. Most graduate programs have admission requirements in addition to the minimum. Furthermore, programs must restrict admission to students whose interests are compatible with available resources and faculty expertise.

#### 1.3.2 Admission to a Graduate Diploma Program

The minimum University requirements for admission to a graduate diploma program are as follows:

- a bachelor's degree from a recognized university, or the equivalent;
- submitted evidence, usually references from qualified referees, of the student's ability to undertake advanced work in the area of interest.

In exceptional circumstances, a student may be admitted with lower formal qualification than in (a) when there is significant professional experience relevant to the proposed area of study.

Students must satisfy any further requirements set by the graduate program committee. Students whose native language is not English may be required to satisfy the University and the graduate program committee as to their capability in English. (See also 1.3.12.)

#### 1.3.3 Admission to a Master's Program

The minimum University requirements for admission to a master's program are as follows.

- a bachelor's degree with a cumulative grade point average of at least 3.0 from a recognized university, or the equivalent;
- submitted evidence, usually references from qualified referees, of the student's ability to undertake advanced work in the area of interest.

In exceptional circumstances, a student may be admitted with lower formal qualification than in (a) when there is significant professional experience relevant to the proposed area of scholarship.

Students must satisfy any further requirements set by the graduate program committee. Students whose native language is not English may be required to satisfy the University and the graduate program committee as to their capability in English. (See also 1.3.12).

### 1.3.4 Admission to a Doctoral Program

The minimum University requirements for admission to a doctoral program are as follows.

a) either

i) a master's degree from a recognized university, or the equivalent, or

ii) a bachelor's degree, with a cumulative grade point average of at least 3.5, from a recognized university, or the equivalent, or

iii) completion of at least 75% of the course work units required for the relevant department's master's program, with a cumulative grade point average of at least 3.5. All graduate courses, whether completed at this University or at another university, shall be considered in the calculation.

and

b) submitted evidence that the applicant is capable of undertaking substantial original research. Normally, such capability will be judged from letters of reference from qualified referees, and the completion of a master's thesis or other scholarly work.

Students must satisfy any further requirements set by the graduate program committee. Students whose native language is not English may be required to satisfy the University and the graduate program committee as to their capability in English. (See also 1.3.12.)

### 1.3.5 Admission Under Special Arrangements

Exceptionally able applicants who wish to work for a master's or doctoral degree outside or between existing programs at Simon Fraser University may apply to work under special arrangements. A student applying for special arrangements must have a well developed plan of studies in an area that can be shown to have internal coherence and academic merit, and in which the university has appropriate expertise and interest among its faculty members.

Graduate students applying or working under special arrangements are required to conform to Senate regulations for graduate students. However, there are additional regulations which concern only those applying or working under special arrangements. Enquiries about these regulations should be directed to the Dean of Graduate Studies by December 1st of each year for admission to the fall term.

Students working under special arrangements may be required to complete a selection of courses from existing programs.

#### 1.3.5.a Cohort Special Arrangements

Cohort-based special arrangements programs are designed to meet the educational needs of specific student groups in fulfilling the requirements for a master's degree where these needs cannot be met within existing programs. Each program will integrate studies from across two or more departments, schools or faculties and will involve a curriculum and requirements recommended by each program's graduate program committee and approved by the senate graduate studies committee. Students may undertake this degree program only through specific admission to the cohort program. Admission criteria,

degree requirements and any other special conditions for a particular cohort special arrangements program must be approved in advance by the senate graduate studies committee; these may not be below the minimum admission and degree requirements of regular graduate programs. In some instances, tuition fees may differ from the regular graduate fee schedule published in the Calendar, and will be announced separately.

### 1.3.6 Admission as a Qualifying Student

Normally, qualifying students will be working either to improve cumulative grade point averages in order to meet the minimum University requirement, or to make up deficiencies in their backgrounds to satisfy the graduate program committee in their area of interest. An applicant may be recommended for admission as a qualifying student when it is expected that the admission requirements for a master's or a doctoral program can be met through the satisfactory completion of no more than 30 units of specified courses. A qualifying student who has completed the make-up work may then apply under 1.3.3 or 1.3.4 for admission to a master's or doctoral program.

The minimum University requirements for admission as a qualifying student are as follows.

a) a bachelor's degree, or the equivalent

b) submitted evidence of academic ability, usually in the form of references from qualified referees

Admission as a qualifying student does not guarantee future admission to a master's or doctoral program unless the offer of admission states that satisfying specific requirements within a specific period of time will result in automatic admission to the program.

Normally a student will be admitted with qualifying status for a maximum of one year (three consecutive terms).

### 1.3.7 Admission as a Non-degree Student

Normally, a non-degree student at the graduate level has at least a bachelor's degree, or the equivalent, is admitted in order to complete specified courses, but is not seeking a degree from this University. A non-degree student will not be permitted to enrol in undergraduate courses.

Application is through the graduate program committee in the department in which the student wishes to work; applicants are advised to contact the department before submitting an application (see 1.3.1). Transcripts of previous university work (or proof of obtaining a degree) will be required at the time of application, but letters of reference will not necessarily be required.

No credit will be given towards any degree offered by the University for courses completed as a non-degree student except, under unusual circumstances, on petition to the senate graduate studies committee.

### 1.3.8 Conditional Admission

Conditional admission may be offered to an applicant who is substantially ready to undertake a program but who has not completed all admission requirements at the time of application. An offer of conditional admission will specify the remaining requirements to be met and a limited time period within which the requirements must be met. Normally, the requirements must be fulfilled either prior to enrolling in the program, or within the first term of enrolment.

### 1.3.9 Admission as an Exchange Student

Bona fide graduate students at other universities who wish to complete courses at Simon Fraser University, not leading to a degree at this University, will be admitted to complete specific graduate courses on the recommendation of the chair of the department

(or equivalent officer) and the dean of graduate studies at the other university, and with the permission of the appropriate graduate program committee and the dean of graduate studies at Simon Fraser University.

### 1.3.9a Admission as a Visiting Researcher

Simon Fraser University accepts visiting research students under the terms of the Canadian Graduate Student Research Mobility Agreement. For details, see the Graduate Studies website at [www.sfu.ca/gradstudents/prospective/visiting.html](http://www.sfu.ca/gradstudents/prospective/visiting.html)

### 1.3.10 Application for Admission

Application is through the Dean of Graduate Studies website. Completed applications and accompanying materials must be submitted to the department before the deadline specified by the department. Applicants are advised to check with the appropriate department as to the prevailing application procedures and deadlines for the graduate program in which they are interested. Applicants are advised that deadlines for applications for awards and teaching assistantships may be earlier than the deadlines for application to a graduate program.

All decisions on graduate admissions are made by the senate graduate studies committee, on recommendation from graduate program committees. Decisions on admissions shall be final. Final approval of admission for non-degree students or exchange graduate students is by the dean of graduate studies.

### 1.3.11 Application to complete a Second Master's or Doctoral Degree

Students who have a master's or a doctoral degree (either from Simon Fraser University or another university) can apply to complete a second master's or doctoral degree under the following constraints.

a) no course work completed for the first degree shall count towards the second.

b) none of the research done for the first degree shall be used for the second.

c) none of the time spent in residence for the first degree shall count towards the residence for the second degree.

### 1.3.12 English Language Competence

English is the language of instruction and communication in the University. Accordingly, an applicant whose primary language is not English or whose previous education has been conducted in another language must demonstrate command of English sufficient to pursue graduate studies in the chosen field. Applicants normally will be required to achieve a satisfactory score on a standardized English test acceptable to the University. This test must include a writing component. The Test of English as a Foreign Language (TOEFL) including reading, writing, speaking, and listening components, is acceptable for this purpose. The IELTS (International English Language Testing Systems) is also acceptable. The minimum university requirements for test scores is TOEFL 88 with a minimum of 20 in each category (internet based exam), or TOEFL 570 and TWE 5 (paper based), or TOEFL 230 (computer based), and IELTS overall band score of 7.0; some graduate programs have higher requirements, as described elsewhere in this Calendar. Some graduate programs have higher requirements, as described elsewhere in this Calendar.

Further details about the above tests may be obtained from the following.

TOEFL and TWE – Education Testing Service, CN 6151, Princeton, NJ, 08541-6151 USA

Other acceptable English tests – Director, Graduate Records and Admissions

### 1.3.13 Certificate Programs

A certificate program consists of approved combinations of graduate courses completed from at least two different departments. Graduate certificate programs are intended to be both thematic and interdisciplinary.

Courses completed for credit in a graduate degree program may be applied to certificate programs. A certificate program must include a minimum of four courses and a minimum of 12 units.

Certificate programs may be completed only by students already enrolled in a master's or doctoral program at Simon Fraser University.

Certificates are awarded at the time of convocation.

## 1.4 Enrolment

Students are enrolled in one of two different types of programs. In 'per term fee' programs, students are charged a standard fee for each term of enrolment. In 'per credit fee' programs, students are charged a fee based on the number of units completed. (See "Graduate Fees" on page 227 for current tuition fee rates.) All students are in per term fee programs except for students in per credit fee programs as listed under Graduate Fees (page 227).

### 1.4.1 Date of Entry

University regulations permit graduate students to enter programs at the beginning of any term, unless a program requires students to start in a specific term.

### 1.4.2 Enrolment

Enrolment begins two months before the start of each term and must be completed by the Friday preceding the start of classes; see "Academic Calendar of Events" on page 12. New students are allowed an additional two weeks to finalize their enrolment, without financial penalty. The course or research-related work for which the student enrolls must have the approval of the chair of the graduate program committee and of his/her senior supervisor, once the senior supervisor is appointed. In addition, enrolment for courses completed outside the student's department must have the approval of the course instructor. Students going on leave are required to enrol (see "1.8.4 Application to go on Leave" on page 223).

### 1.4.3 Continuity of Enrolment

Students in per term fee programs are required to enrol in every term until all requirements for the degree have been fulfilled. This includes students enrolled on leave. A student who does not enrol is considered to have withdrawn from the University. (See 1.8.4 for regulations on student leave.) Students in per unit fee programs enrol only in those terms in which they are taking courses or working on other requirements, such as a project or field exam. A student in a per unit fee program who does not enrol in at least one of three consecutive terms is considered to have withdrawn from the University. Enrolment in an undergraduate course or audit course only does not satisfy the requirement for continuity of enrolment.

### 1.4.6 Course Audit

Graduate students may audit graduate courses, with permission of the instructor, senior supervisor and graduate program chair of the student's department. Such audits are recorded as AU on the student's transcript.

Prior to enrolment, the student and instructor must agree on the requirements for auditing the class.

These requirements must include regular attendance at class meetings, completion of readings and participation in class activities.

Audited courses will not count toward degree requirements.

A student may change enrolment status in a course from audit to regular enrolment, or from regular enrolment to audit until the deadline for late enrolment for the term. Normally, no further change in enrolment status will be permitted after that date.

### 1.4.7 Co-operative Education

Co-operative education integrates work experience and graduate studies. The name reflects the co-operative relationship among the University, employer and student. Practical experience from work terms is related to the student's major interests within the graduate program. A number of graduate programs have been approved, by the relevant graduate program committee, for co-operative education (co-op). These are listed below.

chemistry (MSc)  
economics (MA)  
environmental toxicology (MET)  
mathematics (MSc)  
resource and environmental management (MRM)  
statistics and actuarial science (MSc)

The list of approved programs is subject to change. In addition, some faculties may permit co-op work terms for individual students on a case-by-case basis. Interested students should consult the co-op co-ordinator.

The application to enrol in co-op is subject to departmental approval. Each department has a specific course for the co-op work term or practicum.

## 1.5 Academic Standing

### 1.5.1 Normal Grading System

The following grades are used at the graduate level in the University.

A+ = 4.33 point (in use since 2002-3)  
A = 4.00 points  
A- = 3.67 points  
B+ = 3.33 points  
B = 3.00 points  
B- = 2.67 points  
C+ = 2.33 points (in use since 2002-3)  
C = 2.00 points  
F = 0 points  
IP = 0 points  
CO = 0 points  
N = 0 points

A student in a master's or doctoral program must maintain a cumulative grade point average (CGPA) of 3.0 in courses completed at Simon Fraser University. The CGPA is the cumulative average of the grade points earned in the Simon Fraser University graduate courses completed towards a graduate diploma, or towards a master's or doctoral degree.

A student in a diploma program must maintain a cumulative grade point average (CGPA) of 2.5 in courses completed at Simon Fraser University. Courses graded on a satisfactory/unsatisfactory basis are not included in the grade point average.

When a student is working on a thesis, extended essay or project as part of the requirements for the degree, the notation IP (in progress) shall be entered on the transcript. IP is not a grade and is not used in calculating the student's CGPA. When a thesis, extended essay or project is completed, the notation CO shall be entered on the transcript. CO is not a grade and is not used in calculating the student's CGPA.

In exceptional circumstances, the grade for a course may be deferred for a specified period determined by the course instructor. This shall be entered as DE in the student's record. If the grade is not received by the director, graduate records and admissions by the last day of the first month of the next term, the DE grade will automatically be converted to an F. DE grades may not be extended beyond this time limit. A DE grade may be changed to a WE if the student can provide medical documentation that they were unable to complete the work within the extended period because of illness. Upon request to the Dean of Graduate Studies a DE grade can be changed to a grade of IP and the course requirements completed in a subsequent term of registration. When the grade for a course is not deferred and no grade is received by the director, admissions and records, the notation N will be placed in the student's record. For the purposes of calculating the CGPA, N counts for 0 points.

A course that is dropped before the end of the second week of the term will not be recorded on the student's transcript. A course that is dropped within the third to eighth weeks (inclusive) will be recorded on the transcript with the notation WD. No course may be dropped after the end of the eighth week and before the end of the twelfth week, except in extenuating circumstances approved by the director, admissions and records. Courses dropped under extenuating circumstances will receive a WE notation. See "Academic Calendar of Events" on page 12 for dates that apply each term. WD and WE grades carry no credit value and are not used in GPA calculations.

### 1.5.2 GN Notation

The notation GN (grade not reported) may be used if circumstances beyond the control of the University make it impossible for grades to be assigned for a course. The notation has no numerical equivalent and does not affect either the term grade point average or cumulative grade point average.

### 1.5.3 Satisfactory/Unsatisfactory Grading (S/U)

With the approval of senate graduate studies committee, a department may require that a designated course be graded satisfactory/unsatisfactory (S/U) for all students in the course.

An individual student may request to complete a course on an S/U basis by applying to the supervisory committee. If that committee concurs, the request will be submitted to the graduate program committee for final approval. If the course is outside the student's department, the approval of the other graduate program committee must also be obtained.

Having enrolled in a course on any grading basis, a student may not change to another grading basis for that course.

None of the student's minimum course work requirement under 1.7.2 may be completed S/U. Neither an S nor a U will count in the CGPA, but the grade received shall be recorded on the transcript.

### 1.5.4 CGPA Required For Continuation and Graduation

A student in a master's or doctoral program is required to maintain a CGPA of at least 3.0. A student in a graduate diploma program is required to maintain a CGPA of at least 2.5. Failure to meet the minimum CGPA is evidence of unsatisfactory progress and the matter will be considered by the graduate program committee as required under the *Procedure for the Review of Unsatisfactory Progress* in regulation 1.8.2.

Under no circumstances will a student, whose CGPA is below 3.0, be awarded a graduate degree.

Under no circumstances will a student with a CGPA below 2.5 be awarded a graduate diploma.

### 1.5.5 Graduate Students Retaking a Course

A graduate student may retake a course under the following conditions.

- a) when the same numbered course covers different material in different terms (many special topics and directed readings courses are of this nature).
- b) when the student wishes to improve the grade earned in the course. Permission of the graduate program committee is required.

Under a), both grades are recorded on the student's transcript, and the grade and the units for both iterations of the course are used for the calculation of the CGPA and towards the units required for the degree. Under b), both grades are recorded on the student's transcript with the notation that the course was retaken to improve the grade. However, only the better grade is used in calculating the CGPA and the units for the course are used only once towards the requirements for the degree.

A student must indicate at the time of enrolment under which of the two conditions the course is being retaken. The correctness of this indication must be certified by the chair of the graduate program committee.

### 1.5.6 FD Notation

The notation FD (failed, academic dishonesty) may be given in case of academic dishonesty, according to academic policy S10.02.

## 1.6 Supervision

### 1.6.1 General

When a graduate student has been admitted, the graduate program committee will exercise general supervision and counselling for the student through the chair of the graduate program committee or a faculty member designated by the chair, until a senior supervisor has been appointed when appropriate.

### 1.6.2 Supervision of a Qualifying Student

A qualifying student comes under the general supervision of the graduate program committee, exercised through the chair of that committee or a faculty member designated by the chair.

### 1.6.3 Senior Supervisor

For degrees that culminate in a thesis, the senior supervisor must be a 'tenure-track' Simon Fraser University faculty member at the rank of assistant professor or above. Associate members may serve as the senior supervisor in their affiliated academic units at the discretion of the academic unit's graduate program committee. Adjunct faculty members may not serve as the senior supervisor but can be co-supervisors.

For degrees that culminate in a project, extended essay, field or comprehensive examination, the senior supervisor must be a Simon Fraser University faculty member deemed to be qualified by the academic unit's graduate studies committee and approved by the dean of graduate studies.

In consultation with the student, the graduate program committee will appoint a senior supervisor as soon as possible after admission to the graduate program. Normally, this appointment shall be made no later than the beginning of the second term of full time equivalent enrolment after the student's admission. The senior supervisor is the person principally responsible for supervising the student throughout the degree program. A senior supervisor must hold the

rank of assistant professor or above at Simon Fraser University.

A senior supervisor who is planning to be off campus for more than three months shall arrange for proper supervision of the student during this absence. The graduate program committee and the dean of graduate studies shall be informed in writing of the arrangement.

A senior supervisor is not required for students in a graduate diploma program. The director of a diploma program is responsible for roles normally assigned to the senior supervisor (e.g. advising students, signing forms).

### 1.6.4 Supervisory Committee

A supervisory committee is not required for students in graduate diploma programs or in degree programs that culminate in an extended essay, field or comprehensive examination.

In degree programs in which there is a requirement for a thesis or a project, a supervisory committee must be established. For students in master's degree programs that culminate in an extended essay, field or comprehensive examination, the senior supervisor alone may comprise the supervisory committee.

Where a supervisory committee requires members in addition to the senior supervisor, the senior supervisor, in consultation with the student, shall recommend the composition of the supervisory committee. The supervisory committee consists of the senior supervisor and at least one other person. Normally, this recommendation shall be made during the same term in which the senior supervisor is appointed.

At least one member of the committee (in addition to the senior supervisor) must normally be a faculty member or an adjunct professor or a research associate at Simon Fraser University. When deemed appropriate by the faculty graduate studies committee and the dean of graduate studies, other member(s) of the supervisory committee may be other suitably qualified person(s). A recommendation for a supervisory committee that includes a person who is not a faculty member at Simon Fraser University should be accompanied by a curriculum vitae of that person.

The composition of the supervisory committee, for which the senior supervisor is chair, shall be approved by the graduate program committee and sent to the dean of graduate studies for final approval. It shall be sent to the faculty graduate studies committee for information.

The supervisory committee is responsible for helping the student develop a program of study leading to a degree and for reporting to the graduate program committee at least once a year on the student's progress towards completing the degree requirements. The supervisory committee shall be available to the student for consultation on a regular basis.

### 1.6.5 Co-supervision

A co-supervisor may be designated when a member of the supervisory committee exercises a degree of supervision and support similar to that of a senior supervisor. Normally, a co-supervisor will be appointed if:

- a) he or she is an Simon Fraser University faculty member holding the rank of assistant professor or above (see 1.6.3); or holds an appointment as an adjunct professor (see policy A12.08) at Simon Fraser University in the same department as the student and senior supervisor; or holds an appointment as an associate member (see policy A12.07) at Simon Fraser University in the same

department as the student and senior supervisor; and

- b) the department graduate program committee satisfies the faculty graduate studies committee and the dean of graduate studies that the level of supervision and/or support to be provided by the co-supervisor is greater than normally expected from regular members of a supervisory committee.

Reasons for approving co-supervision will vary, but could include: co-investigator with the senior supervisor of a research grant funding the student's research; providing significant supervision in a field outside the senior supervisor's area of expertise; supervising a laboratory where the student undertakes research.

Appointment as co-supervisor recognizes significant contribution of time, expertise or financial resources. However, the supervision of the student remains the responsibility of the senior supervisor, who must perform all of the activities normally expected of a senior supervisor. The co-supervisor will not take on any of the administrative responsibilities of the senior supervisor. The co-supervisor may not substitute for the senior supervisor, except under circumstances described in 1.6.3.

Co-supervisory status is recommended by the department graduate program committee to the faculty graduate studies committee. Departments and faculties are responsible for setting criteria and standards appropriate to their disciplines. If the faculty graduate studies committee supports the appointment, it shall be forwarded to the dean of graduate studies for approval. Status as co-supervisor will be noted on all relevant documents, and on the signature page of the thesis.

Co-supervisory status may be terminated by the dean of graduate studies if either condition a) or b) (above) is no longer met, or if the co-supervisor is unable to comply with Simon Fraser University policies and procedures relevant to graduate supervision.

It is the responsibility of the co-supervisor to inform his/her department chair (at Simon Fraser University) or employer (off campus) of his/her status as co-supervisor.

### 1.6.6 Change in the Supervisory Committee

Continuity of supervision is important in all graduate work. As a consequence, a change in supervisory committee, especially a change in senior supervisor, may be made only on the basis of strong reasons.

A request for a change in the supervisory committee may come from the student or any member of the supervisory committee. It shall be sent to the graduate program committee accompanied by the reasons, in writing, for the proposed change. If the graduate program committee concurs in the request, it shall be sent to the dean of graduate studies for final approval.

### 1.6.7 Human Subjects Ethics Review

**All research plans involving human subjects must receive ethics approval. Copies of the policy (R20.01), procedures and forms for this review may be obtained from the Office of Research Services or from the University web site ([www.sfu.ca/policies/research/index.htm](http://www.sfu.ca/policies/research/index.htm)).**

## 1.7 Residence and Course Requirements

Minimum course work requirements are defined in 1.7.1, 1.7.2 and 1.7.4. See 1.7.6 for regulations concerning courses completed at other institutions. There is a residence requirement for all doctoral programs (see 1.7.3).

### 1.7.1 Requirements for the Graduate Diploma

There is no residence requirement for the graduate diploma. Candidates must complete the University minimum requirement of 22 units of graduate course work. A graduate program committee may require graduate or undergraduate work in addition to the minimum requirements, either on an individual basis or, with senate ratification, for all students in the program.

### 1.7.2 Residence Requirement for the Master's Degree

Master's candidates must complete the University minimum requirement in one of the following ways.

- successfully complete a minimum of 12 units of graduate course work and submit a thesis;
- successfully complete a minimum of 20 units of graduate course work and submit at least two extended essays, or a project;
- successfully complete a minimum of 30 units of graduate course work and pass a final examination

Not all of these options are available for every program. A graduate program committee may require work in addition to the minimum requirements either on an individual basis or, with Senate ratification, for all students in its program.

### 1.7.3 Residence Requirement for the Doctoral Degree

The aim of the residence requirement is that the student spend a period of time in contact with faculty members and other students. Doctoral students must enrol for a minimum of five terms. On leave terms will not count toward this minimum.

### 1.7.4 Course Requirements for the Doctoral Degree

There are no University course requirements for the doctoral degree. However, a student's supervisory committee, graduate program committee or the faculty graduate studies committee, may require a student to complete specified courses or units as part of the degree program.

### 1.7.5 Doctoral Thesis

All doctoral programs require a doctoral thesis based on substantial original research.

### 1.7.6 Courses in Master's and Doctoral Programs

The following rules apply to the minimum course work requirement.

One half of the minimum course work of the University or departmental degree requirements must be completed at this University.

None of the University minimum may be courses completed in order to qualify for admission.

None of the University minimum may be undergraduate courses.

A graduate student may apply to complete one or more courses at another university for credit towards a degree at Simon Fraser University under the following conditions.

- Such applications shall be made at least one month before the course/courses start and shall be approved by the student's supervisory committee and graduate program committee and be sent to the Dean of Graduate Studies for final approval.
- While completing a course/courses at another university under these provisions, the student shall maintain normal enrolment at this University, not enrolment on leave.

c) Transfer credit is not used in the calculation of the cumulative grade point average.

A graduate student may apply to have credit for graduate courses completed prior to admission applied to the requirements for the degree, under the following conditions.

- Courses must have been completed within two years of starting the Simon Fraser University program
- Courses may not have been used to earn another credential and may not have been completed as part of a qualifying year
- application for advance credit must be made at the time of application for admission, and must be approved by the graduate program committee and the dean of graduate studies.

## 1.8 Progress, Withdrawal and Leave

### 1.8.1 Progress Evaluation

For master's and doctoral students, the supervisory committee shall report on the student's progress at least once each year. This report will be sent, in writing, to the graduate program committee with a copy to the student. The evaluation of student progress in course work will rely in part on their maintenance of a CGPA of 3.0, as required by graduate regulation 1.5.4.

For graduate diploma students, a progress review will be initiated if the CGPA drops below 2.5.

### 1.8.2 Review of Unsatisfactory Progress

If a student's progress appears to be unsatisfactory, the supervisory committee or the chair of the graduate program committee shall make a written report to the graduate program committee, and provide a copy to the student. That committee shall consider whether the student's progress has been satisfactory. The graduate program committee, on consultation with the supervisory committee, if one has been appointed, may:

- require the student to withdraw, or
- inform the student of the unsatisfactory progress and require the student to improve in specific ways in a specific period of time.

The student concerned has the right to appear before the graduate program committee when the case is considered, and may submit any materials relevant to the case. A student who is required to withdraw shall be informed, in writing, with copies to the dean of graduate studies and the director, graduate admissions and records. If required to improve within a specific period of time, the student shall be informed in writing as to what precisely is required, with copies to the dean of graduate studies and the director, admissions and records.

Any decision of the graduate program committee under the provisions of this section may be appealed to the senate graduate studies committee through the dean of graduate studies. The student has the right to appear before the senate graduate studies committee when the case is heard. The decision of that committee shall be final.

### 1.8.3 Withdrawal from Courses and from the University

Permission of the senior supervisor and the chair of the graduate program committee is required to withdraw from a course. If the senior supervisor is not yet appointed, or if the student is in a graduate diploma program, permission of the chair of the graduate program committee is required. If such permission is granted, a student may withdraw from a

course without academic penalty up to the end of the ninth week of classes in any term.

Under extenuating circumstances, a student may withdraw from a course without academic penalty during the tenth to the 12th week of classes. Such circumstances must be beyond the control of the student (e.g., medical or financial crisis); under such circumstances, therefore, 898 (Master's Thesis Research), 899 (PhD Research) or a similar course may be added, as appropriate. Permission of the senior supervisor and the chair of the graduate program committee is required.

A student may withdraw from the University at any time by notifying the chair of the graduate program committee and the director, graduate admissions and records.

A student who has withdrawn from the University and who wishes to re-enter shall apply for permission under the same conditions as any other applicant.

### 1.8.4 Application to go on Leave

In this section, exceptional circumstances for interrupting a student's graduate program normally means illness, accident, disability, pregnancy or parenting responsibilities. Students in such circumstances are expected to present documentation for those reasons when applying to go on leave.

Students in per unit fee programs are not required to maintain continuous enrolment, and so are not eligible to enrol on leave. Students in per unit degree programs are required to register for courses in at least one term out of every three, and failure to do so will result in the student being considered to have withdrawn from the University (see "1.4.3 Continuity of Enrolment" on page 221). If a student in a per unit fee program is unable to undertake course work in a term for exceptional circumstances, and by not registering in courses for that term, would be withdrawn automatically from the University, s/he should discuss the situation with the dean of graduate studies, who will advise on processes for readmission under such circumstances.

Students in per term fee programs are expected to maintain continuous enrolment (see 1.4.3). However, a student may apply to go on leave if both of the following conditions are satisfied.

- a situation arises which makes it necessary to interrupt the graduate program;
- and
- no substantial use will be made of University facilities.

Permission to enrol on leave must be approved by the student's senior supervisor and the chair of the student's graduate program committee. When the situation necessitating the interruption of the student's graduate program is due to exceptional circumstances, permission to enrol on leave will not normally be denied. Students who apply for a leave due to exceptional circumstances and have permission denied for that leave should apply to the dean of graduate studies for consideration of their application.

Students on leave are required to enrol during the normal enrolment period for each term by indicating on leave status when enrolling, and they will be assessed an on leave fee (see "On Leave" on page 227 in the "Graduate Fees" section). This fee will be waived for students enrolled on leave due to exceptional circumstances.

Enrolling on leave may impact upon a student's ability to complete their degree within the maximum time allowed (see "1.12 Maximum Time for Completion of the Requirements for the Degree" on page 225). For students in master's degree programs (see "1.12 Maximum Time for Completion of the Requirements for the Degree" on page 225), no term or enrolment

on leave will count toward the maximum 12 terms of enrolment allowed for the completion of their degree requirements. Further to this, each term of on leave enrolment for exceptional circumstances will extend, by four months, the six calendar year period of time from the student's initial enrolment in their graduate program in which they must complete their degree requirements. Terms of enrolment on leave for other reasons will not extend that six calendar year period. For students in doctoral programs (see "1.12.3 Doctoral Degree" on page 226), each term of on leave enrolment for exceptional circumstances will extend, by four months, the eight calendar year period of time from the student's initial enrolment in their graduate program in which they must complete their degree requirements. Terms of enrolment on leave for other reasons will not extend that eight calendar year period. Further, no term of on leave enrolment, regardless of the reasons for enrolment on leave, will count toward the minimum of five terms the student must spend enrolled in their program (see "1.7.3 Residence Requirement for the Doctoral Degree" on page 223). Students who wish to enrol on leave for more than three sequential terms must submit a written explanation for all subsequent on leave enrolments. Such applications require approval from the dean of graduate studies.

## 1.9 Preparation for Examinations

### Master's Students

#### 1.9.1 Examining Committee for a Master's Degree Candidate

Each candidate for a master's degree shall be examined on the thesis, extended essays field or comprehensive examination, or project. The nature of the examination and the composition of the examining committee of a student's extended essay, field or comprehensives shall be as designated by the appropriate faculty graduate studies committee and the dean of graduate studies.

Examination of projects for all graduate programs shall be as for the examination of theses with the same requirements for committee composition unless a different examination process has been designated by the appropriate faculty graduate studies committee and the dean of graduate studies.

Examination of projects for all other graduate programs shall be as for the examination of theses with the following exceptions: when the project is live, taped or filmed, only one presentation is required for examination, and only one recording is required for deposition in the library. The one copy deposited in the library shall be the property of the University. The student shall have the right to copy the original, and the right to borrow it for external showing at the discretion of the librarian.

Where such an examination is required for a thesis the examining committee shall have the following minimum composition.

- the chair of the student's graduate program committee, or his/her designate, who shall be a non-voting chair of the examining committee. If the chair of the graduate program committee is also on the student's supervisory committee, he/she shall designate a member of faculty at this University, who is not a member of the student's supervisory committee, as chair.
- all members of the student's supervisory committee.
- a member of faculty at the university, or a person otherwise suitably qualified, who is not a member of the student's supervisory committee. For those seeking a degree under special arrangements, this person shall be from outside the University. For a thesis defence in the Faculty of Arts and Social Sciences, a master's examiner may not be a member

of the same department as the one granting the degree, unless a waiver is granted by the Dean of Arts and Social Sciences or his/her designate.

#### 1.9.2 Preparation for Examination of Master's Thesis

Preparation for the examination of a master's thesis shall not take place until the thesis is substantially complete and in the format laid down in *Preparation of Thesis, Extended Essays and Project: Regulations and Guidelines* (revised February 1997).

The candidate's supervisory committee shall make a recommendation to the chair of the graduate program committee concerning the date, place and time of the thesis examination and the composition of the examining committee in conformity with 1.9.1.

Upon approval of the chair of the graduate program committee, this recommendation, with the thesis title and an abstract, shall be sent to the director, graduate records and admissions for entry into the University's records. The examining committee composition shall reach the director at least four weeks before the examination date. At this time, the chair of the graduate program committee will notify the University community of the intended time and place of the examination.

At least two weeks before the date of the thesis examination, unbound copies of the completed thesis shall be distributed to the examining committee by the chair of the graduate program committee, and one copy shall be made generally available for inspection by interested members of faculty and students. Department rules may require earlier submission of the completed thesis.

If the date or place has been changed, the chair of the graduate program committee will notify the University community.

The examination of the thesis shall take place under the regulations for thesis examination given in 1.10.1.

### Doctoral Students

#### 1.9.3 Examining Committee for Doctoral Thesis

Each candidate for a doctoral degree shall be examined on the thesis. Each examining committee shall have the following minimum composition:

- the chair of the graduate program committee, or designate, who shall be a non-voting chair of the examining committee. If the chair of the graduate program committee is also on the student's supervisory committee, he shall designate a member of faculty at the University, who is not a member of the student's supervisory committee, as chair.
- all members of the student's supervisory committee
- a member of faculty at the University or a person otherwise suitably qualified, who is not a member of the student's supervisory committee. For a thesis defence in the Faculty of Arts and Social Sciences, the 'internal external' examiner may not be a member of the same department as the one granting the degree.
- an external examiner who shall be specifically qualified in the field of the thesis and not be a member of faculty at the University

#### 1.9.4 Preparation for Examination of Doctoral Thesis

Preparation for the examination of a doctoral thesis shall not take place until the thesis is substantially complete and in the format laid down in *Preparation of Thesis, Extended Essays and Project: Regulations and Guidelines* (revised February 1997).

The candidate's supervisory committee shall make a recommendation to the chair of the graduate program committee concerning the composition of the examining committee (in conformity with 1.9.3) and the date, place and time of the thesis examination. Upon approval of the chair of the graduate program committee, this recommendation, with the thesis title, abstract, and curriculum vitae of the external examiner, shall be sent to the Dean of Graduate Studies for final approval. The examining committee composition shall reach the Dean of Graduate Studies at least six weeks before the examination date. At this time, the chair of the graduate program committee will notify the University community of the intended time and place of the examination.

After the recommendation is approved, the Dean of Graduate Studies shall formally invite the external.

Unbound copies of the completed thesis shall be distributed to the examining committee by the chair of the graduate program committee after approval of the examining committee and thesis examination arrangements by the dean and at least four weeks before the date of examination. The chair of the examining committee shall inform the Dean of Graduate Studies in writing when the thesis has been distributed. Department rules may require earlier submission of the completed thesis.

The examination of the thesis shall take place under the regulations for thesis examination given in 1.10.1.

#### 1.9.5 The Role of the External Examiner

The external examiner should be a distinguished scholar with particular experience in the field of the thesis research. The examiner shall be free from potential conflict of interest which may arise, for example, from research collaboration with the student or prospective employment of the student. Whether the external examiner will participate in person or in absentia, including the possibility of a conference telephone connection or similar means, will be determined by the dean of graduate studies who will take into account the departmental views.

The external examiner shall be asked to report on the thesis, to the dean of graduate studies only, before the examination. If the report states that the thesis is ready for defence, a copy shall be sent to the chair of the examining committee by the dean of graduate studies for distribution to all members of the examining committee before the examination. The contents of the report will not be communicated to the student. If the report recommends that the examination be postponed, the dean shall send a copy to the chair of the examining committee, the senior supervisor and the chair of the graduate program committee. The chair of the graduate program committee and the senior supervisor will inform the student of the content of the report. Following discussions with the student and the supervisory committee, the chair of the graduate program committee shall report to the dean whether the examination will take place as scheduled or be postponed.

Once the examination has happened, and if the thesis is passed, the external examiner shall send a brief report to the senior supervisor which indicates the general quality of the thesis. That report (which may be either a copy of the initial report to the dean of graduate studies or a report prepared after the thesis defence) shall accompany the recommendation for award of the degree.

In the event of examination in absentia, the report of the external examiner should be quite extensive and give a specific recommendation as to whether the thesis ought to pass, fail, or be subject to revision as under 1.10.2. The report may contain specific questions the external examiner would like posed to the candidate. The report shall be copied, by the dean



of graduate studies, to the chair of the examining committee, for distribution to all members of the examining committee before the examination. Specific questions raised by the external examiner in that report shall be directed to the candidate during the examination by members of the examining committee selected by the chair of the examining committee.

### 1.9.6 Notification of Doctoral Thesis Examination

At least 10 days before the proposed examination, the chair of the graduate program committee will notify the candidate, the examining committee, the dean or deans of faculty concerned and the dean of graduate studies of the date, place and time of the thesis examination; this date shall not be earlier than the originally proposed date. The dean of graduate studies will notify the University community.

## 1.10 Examinations

### 1.10.1 Thesis Examination

The candidate shall give an oral account of the research on which the thesis is based and defend the thesis itself. The candidate must be prepared to answer questions on the field of the research and related fields.

Thesis examinations are open to the University community. Copies of the thesis abstract shall be made available to all those attending the examination. The chair of the examining committee shall allow proper opportunity for questions on the thesis to come from persons who are not members of the examining committee but are attending the examination. The dean of graduate studies or designate shall have the right to attend all phases of the examination.

After the chair of the examining committee is satisfied that all relevant questions have been answered, the examining committee shall meet *in camera* to classify the thesis.

### 1.10.2 Classification of the Thesis

There are four possible outcomes of the thesis defence.

- 1) the thesis may be passed as submitted
- 2) the thesis may be passed on the condition that revisions be completed to the satisfaction of the senior supervisor
- 3) the examining committee may defer making judgement if it judges that the thesis could pass after additional work by the candidate. A thesis upon which judgement is deferred shall come forward for re-examination within a period specified by the examining committee. The examining committee may require formal re-examination under section 1.10.1 or may reach its decision by examination of the revised thesis. The examining committee may not defer judgement a second time.
- 4) the thesis may be failed. In this case, the candidate is required to withdraw from the University.

The decision of the examining committee is by simple majority vote except that, in the cases of doctoral candidates or candidates enrolled under special arrangements, the classification of the thesis may not be at a higher level than that of the external examiner. A decision to pass the thesis or to defer making judgement may not be reached on a tie vote of the examining committee. If at first a majority vote to pass the thesis cannot be reached, and subsequently, if a majority vote to defer judgement cannot be reached, the thesis will be failed.

### 1.10.3 Recommendation for the Award of the Degree

When a student has successfully defended the thesis and made any minor revisions required, the supervisory committee shall recommend award of degree. This recommendation goes for approval respectively to the graduate program committee, the faculty graduate studies committee, the senate graduate studies committee and senate, which has the final authority to award the degree.

The title of the thesis, extended essays, professional paper and projects will be recorded on the student's transcript.

### 1.10.4 Submission of the Thesis to the Library

If the examining committee has required minor revisions to a thesis, these will be completed as soon as possible after the examination and checked by the senior supervisor. Two unbound copies of the final draft of the completed thesis shall be sent to the library together with a memorandum from the senior supervisor certifying that all required revisions have been made. These two copies will be bound, catalogued and retained by the library, one for the general collection and one for the University archives. graduate program committees may also require not more than two bound copies for departmental files and these should be submitted for binding at the same time.

When the library representative of the dean of graduate studies has checked the thesis and accepted the format, the representative will notify the director of graduate programs, admissions and records. No degree will be approved by senate until the director of graduate programs, admissions and records has been so notified.

## 1.11 Publication of Thesis

When the thesis is submitted to the library, the student shall authorize the copying and publication of the thesis as follows.

### 1.11.1 Partial Copyright License

Except as noted in 1.11.3, the student shall sign a partial copyright license which grants to the University the right to lend the thesis to users of the library, and to make partial or single copies for such users. Multiple copying is not permitted without written permission from the author except that, if the author is unobtainable, the dean of graduate studies may give this permission.

### 1.11.2 Reproduction

Except as noted in 1.11.3, the student shall sign an agreement form authorizing the National Library of Canada to reproduce the thesis and to sell microfilm copies on request.

### 1.11.3 Postponement of Publication

The results of research conducted at Simon Fraser University should be available freely to the public, and it is expected that theses will be placed in the library immediately following final revisions. It is the responsibility of graduate students to ensure that this policy is communicated clearly to relevant individuals and organizations outside the university prior to the initiation of any research project.

A thesis may be withheld from circulation and from copying for a period of 12 months from the date of defence of the thesis, in order to protect confidential commercial information, patentable material, pending application, or where immediate commercial publication is anticipated. No extensions to this time limit will be permitted. At the time of the thesis defence, a thesis withholding document requesting

and authorizing such delay shall be signed by the student, the senior supervisor, and the dean of graduate studies. The official copies of the thesis and all pertinent forms shall be deposited in the library along with the withholding document. A copy of the thesis shall not be sent to The National Library of Canada during the restricted period but the abstract of the doctoral thesis shall be sent to Dissertation Abstracts International with the period of restriction duly noted.

Under exceptional circumstances, portions of a thesis may be withheld from the reference copy of the thesis that is made available to faculty members and students (see 1.9.2 and 1.9.4). This procedure must be authorized by the dean of graduate studies well before the distribution of the thesis. The dean must ensure that only the most confidential material is withheld from the thesis, and that the overall content of the thesis is not lost.

### 1.11.4 Publication of the Thesis by the Student

None of the clauses above preclude the student from publishing the thesis in any form at any time.

## 1.12 Maximum Time for Completion of the Requirements for the Degree

### 1.12.1 General

The maximum times for completion given below are not intended to be the normal times for completion. They are intended to take into account a wide variety of extraordinary circumstances and events that may delay completion. Individual departments may specify their expectations of normal degree completion times as a guide to determining whether a student's progress is satisfactory.

Although it is expected that most students will complete their programs well before reaching the time limit, some students may be required to suspend work for a period of time because of mental or physical disability, pregnancy or family responsibilities. In such cases, students should apply to go on leave, should present evidence (e.g. from a doctor) of the necessity of the interruption of studies, and should request that their on-leave fees be waived. On-leave terms completed under such circumstances will be added to the maximum length of time in program. Students who take on-leave terms for other reasons will not receive extensions. Students in per unit fee programs do not take on-leave terms. Students in those programs should submit a letter to the chair of the graduate program committee outlining the circumstances and requesting that their maximum time in program be extended, together with the required documentation.

Students with long-term disabilities should discuss their situation with the Centre for Students with Disabilities early in their graduate studies or as soon as possible after the condition is diagnosed. The centre will assist students and their departments to develop plans for completion of programs, and this may include an extension beyond the normal time limits. Such plans must be approved by the Dean of Graduate Studies.

### 1.12.2 Master's Degree

Students in per term fee programs (see 1.4) shall complete all of the requirements for a master's degree within 12 terms of equivalent enrolment. On-leave terms will not be counted as terms of enrolment. In addition, all requirements of the master's degree must be completed within six calendar years of initial enrolment as a master's student. Students in per unit fee programs (see 1.4)

shall complete all of the requirements for a master's degree within six calendar years of initial enrolment.

### 1.12.3 Doctoral Degree

A student shall complete all the requirements for a doctoral degree within eight calendar years of initial enrolment as a doctoral student or, in the case of a student who has transferred from a master's program into the doctoral program without completing the master's degree, within eight calendar years of initial enrolment as a master's student.

### 1.12.4 Readmission

Students who have withdrawn from their program and have not reached their maximum time can be readmitted to complete their degree requirements. Students who have reached their maximum time, did not complete the degree requirements, and thus were required to withdraw, can apply for readmission for one term only to complete those requirements. The term of readmission may be no later than the ninth term after the one in which the student withdrew from the Program. The student applies for readmission to the relevant graduate program committee, who will make a recommendation to the dean of graduate students. Final approval for readmission is by the dean of graduate studies. Readmission decisions may be appealed in the same way as admission decisions (see 1.16.3).

Students who have not been withdrawn but have reached their maximum time can request an extension for one term to complete their degree requirements.

## 1.13 Award of the Degree

### 1.13.1 Application for Graduation

Every candidate for a graduate degree is responsible for applying for graduation online through mySFU.

### 1.13.2 Award of the Degree

Award of the degree is by resolution of senate.

### 1.13.3 Transcripts

Certified official transcripts of the student's graduate academic record may be obtained from the Office of the Dean of Graduate Studies. Only individually signed copies with the University seal are valid. For further information on cost refer to "Graduate Fees" on page 227.

## 1.14 Convocation Ceremony

Convocation is held twice annually. Graduates from the previous fall and spring terms convocate in early June, while graduates from the summer term convocate in October.

## 1.15 Class Interruption

Simon Fraser University makes reasonable efforts to ensure that its classes and courses of instruction proceed on a regular basis and without interruption. Faculty have certain discretion to cancel or change the timetable for their classes; they will endeavor to give reasonable notice of any cancellation or change. Simon Fraser University will not be responsible for cancellation or change of any class. Neither will Simon Fraser University be responsible for the interruption or termination of any class or course of instruction which results from fire, riot, labor disruption or any other event which occurs despite the

University's efforts, or for failure to give notice of the interruption or termination.

## 1.16 Graduate Student Appeals

Graduate students are advised to seek informal resolution of problems through discussions with their supervisor, graduate program chair, department chair or faculty dean, and the dean of graduate studies.

### 1.16.1 Grades

May be appealed to the instructor, department chair and, in some cases, faculty dean in accordance with academic policy T 20.01.

### 1.16.2 Progress Evaluations

May be appealed to the senate graduate studies committee (see 1.8.2).

### 1.16.3 Admission

Applicants who meet or exceed minimum requirements for admission are not assured of admission to any graduate program (see 1.3.1)

Normally, admission decisions may not be appealed (see 1.3.10). In exceptional circumstances, unsuccessful applicants may appeal to the committee to review university admissions. This committee will only review the fairness of admissions procedures and will not review an applicant's credentials.

Appeal forms are available at <http://students.sfu.ca/forms>.

### 1.16.4 Other Appeals

Appeals of decisions on enrolment, graduation, entry/re-entry to a program or any matter relating to academic standing (other than review of unsatisfactory progress) are referred to the senate appeals board. Appeal forms are available at <http://students.sfu.ca/forms>.

# Graduate Fees

## Tuition Fee Schedule 2009 – 2010

Fees are subject to change, subject to provincial legislation, and subject to board of governors approval. International students in graduate programs pay the same fees as domestic students unless otherwise noted.

\* As indicated some graduate programs fees at previous years' rates may apply for students who entered those programs prior to fall 2009.

Per Term Fee Programs	per Term
<i>Graduate students in 'per term fee' programs pay a set fee every term, regardless of the number of courses undertaken.</i>	
research programs, full-time fee*	\$1,565.60
research programs, continuing fee*	\$782.80
research programs, on-leave fee	\$195.70
graduate diploma in bioinformatics	\$1,565.60
executive master of business administration (EMBA)*, if entering in fall 2008 or later	\$9,500.00
master of education (MEd)*, off-campus, if entering in fall 2008 or later	\$2,484.30
master of education (MEd)*, international cohorts ESL/EFL and curriculum and instruction, if entering in fall 2008 or later	\$6,101.90
doctor of education (EdD)*, if entering in fall 2008 or later	\$4,095.10
graduate Co-operative Education practicum	\$665.40
Per Unit Fee Programs	per Unit
<i>Graduate students in 'per unit fee' programs pay tuition fees based on the number of units in which they are enrolled.</i>	
all graduate per unit fee programs – basic	\$157.30
graduate diploma in quantitative methods in fisheries management	\$157.30
graduate diploma in business administration	\$572.90
graduate diploma in education*	\$257.40
graduate diploma in global health*	\$247.40
graduate diploma in urban studies	\$253.90
master of financial risk management (MFRM)*	\$558.60
master of arts (MA) in international leadership	\$208.10
master of arts (MA) in liberal studies	\$151.10
master of business administration (MBA)	\$600.00
master of business administration (MBA) in management of technology (MOT)*, if entered in fall 2008 or later	\$574.10
master of business administration (MBA) in global asset and wealth management (GAWM)*	\$714.30
master of engineering (MEng)	\$451.00
master of public health (MPH)*	\$247.40
master of public policy (MPP)	\$217.90
master of publishing (MPub)	\$300.00
master of science (MSc) in kinesiology (course work-based program)	\$208.10
master of urban studies (MUrb)	\$253.90

## Master's Program

The minimum fee for a master's program is six term fee units. However, the minimum fee rule will be waived for students who complete all degree requirements in less than six terms of continuous full time enrolment.

Students who enrol on leave are not eligible for the waiver of the minimum fee requirements.

A master's students who has completed six terms of enrolment (excluding on leave enrolment) pays a continuing fee in subsequent terms equal to one half of the regular fee.

## Doctoral Program

A doctoral student who has completed eight terms of enrolment (excluding on leave enrolment) pays a continuing fee in subsequent terms equal to one half of the regular fee.

Terms in which a student enrolls on leave do not count towards the number of terms required to switch to the continuing fee.

## Co-operative Education

Per term fee students in a co-operative education term who are completing at least one course will pay a per term fee based on the stage they have reached in their program (either regular fee or continuing fee). Students not completing a course will pay the co-operative education fee.

Per unit fee students in a co-operative education term will pay the co-operative education fee. If students are also completing courses, they also pay the fees that are applicable to those courses.

Fees are listed in the tuition fee schedule.

## Per Unit Fee Programs

In programs in which there is a final 'capstone' requirement such as a thesis, project, extended essay or field exam, this requirement is assigned a number of units. Students must enrol for this and pay the appropriate fee for at least one term, normally at the end of their program of study. Once they have enrolled for this requirement in a particular term, they must enrol in all subsequent terms until degree requirements have been completed. In the subsequent terms of enrolment for this requirement, the units assigned will be half the first term's value.

Students who audit a course will pay the same audit fee as domestic undergraduate students.

Students in per unit programs who complete undergraduate or graduate courses in other programs at Simon Fraser University, or who complete courses at other institutions covered by the Western Deans' Agreement, will pay the same fee per unit as they do for courses in their own programs.

Fees are listed in the tuition fee schedule.

## Extension and Readmission

Per term fee students enrolled for a one term extension beyond the maximum time limits of their program, and students readmitted to complete their degree requirements pay the full per term fee.

Per unit fee students enrolled for a one term extension beyond the maximum time limits of their program, or readmitted for one term to complete their degree requirements pay the per unit fee that is applicable to their program.

All students pay a \$100 reinstatement fee and a \$75 application fee for readmission.

## Fees — Ancillary

For further information regarding these fees which are applicable to both graduate and undergraduate students, see "Student Services and Recreation-Athletics Fees" on page 33 and "Universal Transit Pass" on page 33.

## Student Activity Fee

This fee, which is set by the Graduate Student Society through a referendum of all Graduate students, is collected from all students who are enrolled in a graduate program as follows:

Student Activity Fee payable by all students, except as noted below	\$60.65
designated 'off-campus' courses only	\$30.33
less than six units in a per unit fee program	\$30.33
Co-operative Education only	\$30.33
students registered on leave	\$0.00

For a breakdown of the student activity fee, see "Graduate Student Society" on page 453.

## Special Fees

Application	\$75.00
On Leave (see <i>Graduate General Regulations</i> )	\$195.70
Reinstatement	\$100.00
Graduation	\$36.00
The non-refundable graduation fee is payable in six installments of \$6.00 in each of the student's first six terms of enrolment in the graduate program.	

## Mandatory Supplementary Course Fees

For information about these fees which are applicable to both graduate and undergraduate students, "Mandatory Supplementary Course Fees" on page 34.

## Biological Sciences

BISC 600 .....	\$189
BISC 812 .....	\$225

**Earth Sciences**

EASC 603.....	up to \$50
EASC 606.....	up to \$3,000
EASC 611.....	up to \$150
EASC 613.....	up to \$30
EASC 617.....	up to \$50
EASC 619.....	up to \$100
EASC 623.....	up to \$40
EASC 624.....	up to \$250
EASC 812.....	\$225

**Geography**

GEOG 612.....	\$100
GEOG 617.....	\$15
GEOG 628.....	up to \$50

**Marine Science**

All MASC courses offered at the Western Canadian Universities Marine Biological Station (Bamfield) .....	\$137 per unit
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**Resource and Environmental Management**

REM 698 .....	\$150
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**Courses at Another Institution**

Except for situations covered by the Western Deans' Agreement, a student enrolled at Simon Fraser University who is approved to complete a course at another institution for credit toward their graduate program is responsible for enrolling at the other

institution and paying fees assessed by that institution. When the student submits proof of tuition fee payment at the other institution, the Simon Fraser University tuition fees for that term will be decreased by that amount and will not exceed the lesser of the two amounts.

**Graduate Benefit Plan**

See "Graduate Benefit Plan" on page 453.

**Admission Deposit**

See "Payment of the Admission Deposit for New Students" on page 35.

**Refund — Withdrawal from Program**

If a student withdraws from the graduate program without completing the degree before the end of the term or withdraws from the term, refunds will be calculated from the date the student officially notifies the Director of Graduate Admissions and Records in writing of his/her withdrawal from the term and/or from the University. Withdrawal in the first month of the term will result in a refund of 75% of the tuition fees and in the second month of the term a refund of 50% of the tuition fees. No other refund will be made.

**Refund — Course Drop**

Students in per term fee programs are not eligible for refunds if they drop one or more courses.

Students in per unit fee programs who drop a course in the first month of the term will receive a 75% refund of tuition fees for that course and 50% in the second month of the term. No refunds will be given if all courses are dropped after that date.

**Refund — Early Completion**

Students who complete their program early in the term may be eligible for a partial refund of the tuition portion of their term fees. For further information, see the dean of graduate studies website at <http://www.sfu.ca/dean-gradstudies>.

**Overdue Accounts and Dishonored Payments**

See "Overdue Accounts and Dishonored Payments" on page 35.

**Full Time and Part Time Attendance**

All graduate students in per term fee programs are considered full time students.

All graduate students enrolled for thesis, project or field exams are considered full time students.

Graduate students in per unit fee programs who enrol for six or more units in a term are considered full time students.

**Tuition Fee Certificates (T2202A)**

See "Tuition Fee Certificates (T2202A)" on page 35.

# Financial Aid for Graduate Students

Graduate students are eligible for a variety of financial assistance programs including entrance or continuing scholarships, graduate fellowships, awards, bursaries and government loans and grants.

**Scholarships and fellowships** recognize outstanding academic achievements; **awards** generally acknowledge outstanding achievements or community contributions. **Bursaries** are awarded on the basis of a demonstrated financial need.

**Government student loans and grants** are awarded on the basis of a demonstrated financial need by the student's province of residence. A grant is funding that a student is not normally required to repay.

Other sources of income are teaching assistantships (TAs) and research assistantships (RAs) which are available in most departments. Applications should be directed to the chair of the appropriate graduate program committee in the intended department.

All graduate scholarship and financial assistance programs are administered by one of two University units. Merit based graduate scholarships and awards (cumulative grade point average of 3.50 or better) are administered by the Office of the Dean of Graduate Studies, room 1100, Maggie Benston Student Services Centre, Tel: 778.782.5411, Fax: 778.782.3080.

Generally, the financial needs-based graduate scholarships, bursaries and loans, including government student loans and grants, the Work-Study program and graduate student bursaries are administered by the Financial Aid and Awards Office, Maggie Benston Student Services Centre, Tel: 778.782.4356.

## Categories of Graduate Scholarships, Awards, Bursaries and Stipends

Merit-based awards available to graduate students and post doctoral researchers from internal and external sources are listed in the graduate awards guide. The guide is available on the dean of graduate studies website at [http://www.sfu.ca/dean-gradstudies/scholarships\\_and\\_awards](http://www.sfu.ca/dean-gradstudies/scholarships_and_awards)

Every attempt has been made to provide up-to-date information. However, it remains the prerogative of the award-granting agencies to change deadline dates, discontinue awards, etc. without prior notice.

## Award Categories

The following awards are administered by the Office of the Dean of Graduate Studies.

- Simon Fraser University Entrance Scholarships (page 229)
- Awards for New and Continuing students (page 231)
- Private Awards (page 231)
- University Administered External Awards (page 237)
- Externally Administered Awards (page 239)

The following awards, bursaries and loans are administered by Financial Aid and Awards, Student Services.

- Bursaries Administered by the University (page 240)
- Bursaries for All Students (page 240)
- Bursaries for Applied Sciences Students (page 242)
- Bursaries for Arts and Social Sciences Students (page 242)
- Bursaries for Business Administration students (page 242)

- Bursaries for Education Students (page 243)
- Bursaries for Communication, Art, and Technology Students (page 243)
- Bursaries for Environment Students (page 243)
- Bursaries for Health Sciences Students (page 243)
- Bursaries for Science Students (page 243)

## General Information and Regulations

The following regulations apply generally to all financial assistance administered by the University.

- Plan and apply well in advance as many scholarship deadlines occur between 4 and 12 months before the granting of the award. Application deadlines are listed for each award on the following pages. Nomination Deadline: April 10. Please note that the published deadlines are approximate dates only, and are subject to change by the awarding agency.
- All scholarships and awards are given on the recommendations of the Senate Graduate Awards Adjudication Committees. Committee decisions, when announced, are final.
- **The University does not guarantee the payment of any scholarships, awards or bursaries listed in the Calendar other than those provided directly from funds of the University. If invested funds do not provide the necessary income for an endowed scholarship, award or bursary, payment of the award may be reduced or the award withheld. The University reserves the right to withhold awards donated by individuals or organizations where the funds required have not actually been received.**
- The University reserves the right to refrain from making an award if, in its opinion, none of the applicants meets the terms specified.
- **The individual graduate student is responsible for knowing deadlines, proper completion of application forms and supplying all appropriate documentation for the various scholarships, awards and bursaries. Incomplete applications may be rejected.**

**The following awards are contingent upon the availability of funds. Further information is available from the Office of the Dean of Graduate Studies, MBC 1100. Completed application forms and all required documentation should be submitted to the Graduate Secretary in the applicant's department of enrolment by the indicated deadlines, unless specified otherwise.**

## Special Awards

### Academic and Service Awards

*Terms of reference:* Graduate students are eligible for many of the University Service Awards listed in the undergraduate *Financial Assistance and Awards* section of the Calendar. Please refer to this section for detailed information.

### Athletic Awards

*Terms of reference:* Graduate students who compete on a Simon Fraser University varsity team may be eligible for Athletic Awards. Please refer to the undergraduate *Financial Assistance and Awards* section of the Calendar for further information. See "Financial Aid and Awards" on page 36.

### Dean of Graduate Studies Convocation Medals

*Nomination deadline:* April 10

*Terms of reference:* A silver medal has been established for a graduating graduate student from each faculty. The dean of the respective faculty will

recommend a student who has achieved the highest level of academic excellence in his/her graduate program.

The criteria for selection of special awards are quality of work, cumulative GPA, and timeliness of completion of the degree. All recommendations are to be forwarded to the dean of graduate studies in April every year.

### Governor General's Gold Medal

*Nomination deadline:* April 10

*Terms of reference:* The Governor General's Gold Medals will be awarded to students who achieve the highest academic standing in their master's or doctoral degree program. The two students selected will be from different faculties.

## Entrance Scholarships

### Major Graduate Entrance Scholarships

**The following entrance awards scholarships are by departmental nomination only. Students applying for admission to a graduate program at Simon Fraser University, and who wish to be considered for an entrance scholarship are strongly encouraged to submit their admission documents to their department of intended enrolment by January 31.**

#### Bert Henry Memorial Graduate Scholarship

*Value:* \$18,000 (subject to funding)

*Nomination deadline:* February 15

*Tenable:* Three consecutive terms

*Terms of reference:* The recipient is an outstanding student who has obtained a master's degree and is entering any PhD program. The recipient must show high academic performance and potential for significant contribution to the chosen field of study. Tenure is for one year and may commence in any term.

#### C.D. Nelson Memorial Graduate Scholarships

*Value:* \$18,000

*Nomination deadline:* February 15

*Tenable:* three consecutive terms

*Terms of reference:* Recipients are outstanding scholars entering any graduate program. Fifteen or more awards are made for a given academic year. Tenure is for one year and may commence in any term.

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**Scott Paper Limited Bicultural Graduate Entrance Fellowship**

*Value:* \$18,000 (subject to funding)

*Nomination deadline:* February 15

*Tenable:* three consecutive terms

*Terms of reference:* The recipient is an outstanding student who has received a previous degree at a University in the province of Quebec and is entering any Simon Fraser University graduate program. One award is made. Tenure is for one year and may commence in any term.

**SFU Alumni Association Graduate Scholarship**

*Value:* \$18,000 (subject to funding)

*Nomination Deadline:* February 15

*Tenable:* three consecutive terms

*Terms of reference:* For an outstanding student entering any Simon Fraser University graduate program. Tenure is for one year and may commence in any term.

**Simons Foundation Doctoral Entrance Fellowship (for Women)**

*Value:* \$18,000 (subject to funding)

*Nomination deadline:* February 15

*Tenable:* three consecutive terms

*Terms of reference:* The recipient is an outstanding woman scholar entering any PhD program at Simon Fraser University. The recipient must show potential for significant contribution to society through achievement in her chosen field. Tenure is for one year and may commence in any term.

**Special Graduate Entrance Scholarships**

*Value:* \$300-\$7,000

*Nomination deadline:* April 30

*Tenable:* September, January or May

*Terms of reference:* One term awards up to a maximum of \$7,000 to students entering a new graduate program at Simon Fraser University. To be eligible, a student must show academic excellence and proof that he/she is being actively recruited by another university. Students must be nominated by their graduate program chair in their intended department to the dean of graduate studies.

**Private Entrance Awards**

The following annual or endowed awards are by departmental nomination. Students applying for admission to a graduate program at Simon Fraser University and who wish to be considered for an entrance scholarship in this category are strongly encouraged to submit their admission documents to their department of intended enrolment by January 31.

**Wm. F. and Ruth Baldwin Graduate Scholarship in History**

*Value:* \$9,000

*Nomination deadline:* February 15

*Tenable:* Two consecutive terms

*Terms of reference:* One or more, two-term awards. Preferentially to an incoming student pursuing a graduate degree in British history.

**Graduate Entrance Scholarship in Business Administration**

*Value:* \$3,500

*Nomination deadline:* February 15

*Tenable:* Any term

*Terms of reference:* An award for a student entering a graduate degree program in business administration in the Faculty of Business Administration.

**Cappgemini Graduate Entrance Scholarships in Business Administration**

*Value:* \$20,000

*Nomination Deadline:* February 15

*Tenable:* fall term

*Terms of reference:* To attract the best and brightest doctoral students to the Segal Graduate School of Business, whose research interests are in innovation,

technology and sustainability. Two, one-year awards, valued at \$20,000 each are available.

**Douglas Cole Memorial Graduate Entrance Scholarship in Cultural History**

*Value:* \$880

*Nomination deadline:* February 15

*Tenable:* fall

*Terms of reference:* One award will be awarded to a student entering the graduate program in history whose focus will be on cultural history.

**Deloitte Graduate Entrance Scholarship**

*Value:* \$6,375

*Nomination deadline:* September 30

*Tenable:* spring term

*Terms of reference:* For a full-time student entering the master of risk management program.

**DuPont Graduate Entrance Scholarship in Chemistry**

*Value:* \$2,575

*Nomination deadline:* February 15

*Tenable:* Any term

*Terms of reference:* Two scholarships will be awarded to the top entering graduate students in the Department of Chemistry. Candidates will be judged on their scholastic and research achievements and potential. Students must be nominated by their intended department.

**Fernandez Earle Graduate Entrance Fellowship in Fisheries**

*Value:* \$15,000 per year

*Nomination deadline:* February 15

*Tenable:* fall, spring and summer terms

*Terms of reference:* For a student entering a master's or doctoral program in any science discipline in the Faculty of Science at Simon Fraser University, after completion of a previous degree at Hawaii Pacific University or for a Simon Fraser University student registered in a research term of a master's or PhD program in the Faculty of Science who travels to Hawaii Pacific University to conduct research or write a project or thesis. Up to a maximum of two years of funding for a master's candidate and up to four years of funding for a doctoral candidate.

**A. John Ellis Graduate Entrance Scholarship in Business Administration**

*Value:* \$10,000

*Nomination deadline:* February 15

*Tenable:* fall and spring terms

*Terms of reference:* One or more awards to attract the best and brightest master's or doctoral students to the Segal Graduate School of Business

**EMAR Canada Annual Graduate Entrance Scholarship in Urban Studies**

*Value:* \$2,500

*Nomination deadline:* February 15

*Tenable:* fall term

*Terms of reference:* To attract and provide financial support for students entering the master of urban studies program.

**Executive MBA (EMBA) Alumni Entrance Scholarships**

*Value:* \$5,000 or \$10,000

*Nomination deadline:* September 30

*Tenable:* fall term

*Terms of reference:* Either one \$10,000 or two \$5,000 entrance scholarships per year for outstanding graduate students entering the executive MBA program in the Faculty of Business Administration. Students will be nominated for these awards by the associate dean on the basis of demonstrated career progression, potential for future career achievements and demonstrated outstanding leadership or service to the community.

**Thelma Finlayson Graduate Entrance Scholarship**

*Value:* \$6,000

*Nomination deadline:* February 15

*Tenable:* fall term

*Terms of reference:* A minimum of three scholarships are available each year to incoming students pursuing studies towards the master of pest management.

**Arthur and Ancie Fouks Graduate Entrance Award in Public Service**

*Value:* \$4,200

*Nomination deadline:* February 15

*Tenable:* Any term

*Terms of reference:* One award to recognize both outstanding academic performance and a high level of public service by a student entering a graduate program at Simon Fraser University. Student must be nominated by his/her intended department.

**Graduate Entrance Scholarship in Geography**

*Value:* \$4,000

*Nomination deadline:* February 15

*Tenable:* Any term

*Terms of reference:* One award for a student entering a graduate program in geography.

**Global Asset and Wealth Management Business Council Entrance Scholarship in Business Administration**

*Value:* \$6,000 or \$10,000

*Nomination deadline:* May 30, September 30, and January 30

*Tenable:* final two terms of the program

*Terms of reference:* Up to ten scholarships per calendar year, to full-time students entering the global asset and wealth management MBA program after having spent a minimum of at least two years employed in the financial services industry in a professional capacity. Students will be nominated for these awards by the director of the program.

**Meredith Kimball Graduate Entrance Scholarship in Women's Studies**

*Value:* \$1,275

*Nomination deadline:* February 15

*Tenable:* fall term

*Terms of reference:* One scholarship is available for a student entering a graduate program in the Department of Women's Studies. Applicants must be nominated for this award by the chair of the graduate program.

**Catherine Ann McKay Publishing Award**

*Value:* \$1,660

*Nomination deadline:* February 15

*Tenable:* summer term

*Terms of reference:* Enrolment in the master's of Publishing program. One award to defray a student's expenses incurred while participating in the internship component of the program.

**Master of Pest Management Graduate Entrance Scholarship**

*Value:* \$850

*Nomination deadline:* February 15

*Tenable:* fall term

*Terms of reference:* One award for a student entering a graduate program leading to the master of pest management in the Centre for Environmental Biology.

**Graduate Entrance Scholarship in Political Science**

*Value:* \$2,200

*Nomination deadline:* February 15

*Tenable:* Any term

*Terms of reference:* One award for a student entering an MA or PhD program in political science.

**Faculty of Science Graduate Entrance Scholarship**

*Value:* \$1,900

*Nomination deadline:* February 15

*Tenable:* fall term

*Terms of reference:* One award for a student from the University College of the Fraser Valley entering the

MSc program in a department in the Faculty of Science at Simon Fraser University.

**O.H. Sorila Memorial Graduate Scholarship in Philosophy**

Value: \$700

Nomination deadline: February 15

Tenable: fall term

Terms of reference: One scholarship for a student entering a master of arts program in the Department of Philosophy. Preference is given to a student coming from overseas, but intending to return to their homeland after degree completion.

**Southam Inc. Graduate Entrance Scholarship in Publishing**

Value: \$3,350

Nomination deadline: February 15

Tenable: Any term

Terms of reference: One award for a student entering the master of publishing program.

**William and Ada Isabelle Steel Memorial Graduate Scholarship**

Value: \$16,000

Nomination deadline: February 15

Tenable: three consecutive terms

Terms of reference: The recipient is an outstanding full time student in any Simon Fraser University graduate program whose research takes place outside the lower mainland of BC. One award (of which \$2,000 of the award value is targeted for travel, accommodation and related research expenses). Tenure is one year and may commence in any term.

**Dorothy Middel Thomas Graduate Entrance Scholarship in English**

Value: \$700

Nomination deadline: February 15

Tenable: Any term

Terms of reference: One award for a student entering a graduate program in the Department of English.

**Doreen Wilkinson Memorial Graduate Scholarship in Economics**

Value: \$2,425

Nomination deadline: February 15

Tenable: Any term

Terms of reference: One or more scholarships will be awarded to graduate students entering the doctoral program in economics. The fund honors Doreen Wilkinson, Economics Departmental Assistant, friend and mentor to many. Students must be nominated by the department.

**Grace Woodworth MacInnis Graduate Award**

Value: \$5,475

Nomination deadline: February 15

Tenable: Any term

Terms of reference: Established in honour of Grace Woodworth MacInnis in recognition of her outstanding contribution as a Canadian parliamentarian and a pioneer woman in Canadian politics. The award supports a student entering the graduate program in Women's Studies.

**Awards for New or Continuing Students**

**Graduate Fellowships**

Value: varies; GFs are awarded in increments of .5, 1.0, 1.5 and 2.0. A partial GF (.5) is valued at \$3,125; a full GF (1.0) is valued at \$6,250. Applicants may be eligible to receive up to a maximum of two full GFs, or four partial GFs during the academic year.

Application deadline: April 15

Tenable: Any term

Terms of reference: Recipients are new or continuing students who are enrolled full-time in a graduate degree program at Simon Fraser University. Awards are made on the basis of academic merit; the normal minimum criterion for eligibility is a 3.5 CGPA.

**Faculty of Applied Sciences Dean's Fund Graduate Fellowships**

Value: \$3,125

Application deadline: April 15

Tenable: Any term

Terms of reference: one term awards. Recipients are full time students in a graduate program in the Faculty of Applied Sciences. Awards are made based on academic merit (minimum of 3.50 cumulative grade point average) and good standing in research ability. Fellowship is based on matching basis: half from the Faculty of Applied Sciences and the other half from the thesis supervisor by way of a research assistantship for a total value of \$6,250.

**Graduate (International) Research Travel Award**

Value: up to a maximum of \$6,250

Application deadline: February 1

Tenable: summer, fall or spring term

Terms of reference: For master's and doctoral students enrolled in a graduate program at Simon Fraser University who must travel to undertake research for their degree requirements. The duration of the research trip must be a minimum of one month to a maximum of four consecutive months. The award value will be prorated depending on trip duration and location. Master's students must complete a project or thesis that will be deposited in the Simon Fraser University Library and hold the award within two years of beginning their degree program. Doctoral students must hold the award within three years of beginning their degree program.

**President's PhD Research Stipends**

Value: \$6,250

Application deadline: end of the second month of the term preceding the term of tenure.

Tenable: Any term

Terms of reference: Doctoral students who commenced their PhD program by January 2009 are eligible to apply. Applicants must be recommended for the PRS by the graduate program chair of the department of enrolment. At the time of application, eligible students must have completed all degree requirements with the exception of the thesis.

**Scotiabank Global Asset & Wealth Management MBA Entrance Scholarship in Business Administration**

Value: \$3,850

Nomination deadline: May 30 or September 30

Tenable: fall, spring or summer

Terms of reference: To attract and provide financial support to a full-time student in the GAWM MBA Program after having spent a minimum of at least two years employed in the financial industry in a professional capacity.

**Travel and Minor Research Awards for Graduate Students**

Value: varies

Application deadline: varies by department of enrolment

Tenable: fall, spring or summer term

Terms of reference: To encourage graduate students to attend conferences to present their research or to travel to undertake their research. Graduate students may also incur non-travel costs associated with their research or conference presentations. It is at the discretion of each graduate program chair to determine the number and value of travel and research awards available within their departmental allocation.

**Private Awards**

The following awards are contingent upon the availability of funds. Detailed information is available from the Office of the Dean of Graduate Studies, MBC 1100. Completed application forms

and all required documentation should be submitted to the graduate secretary in the applicant's department of enrolment by the indicated deadlines, unless specified otherwise

**J. Abbott/M. Fretwell Graduate Fellowship in Fisheries Biology**

Value: \$4,325

Application deadline: September 30

Tenable: spring term

Terms of reference: One fellowship to a graduate student showing academic merit in fisheries biology. Preference will be given to an applicant with a strong sports background. This fellowship was established in memory of Jeremy Abbott and Michael Fretwell after their death in a tragic helicopter accident in September 1988.

**Alan David Aberbach Scholarship in United States History**

Value: \$3,800

Nomination deadline: May 30

Tenable: fall

Terms of reference: One award to advance the study of U.S. history will be available to a student who is either entering, or registered in, a graduate program in the Department of History whose research focus is on some aspect of U.S. history.

**Access Copyright Graduate Award in Publishing Studies**

Value: \$1,775

Application deadline: September 30

Tenable: spring term

Terms of reference: One award to a graduate student in the master of publishing program, demonstrating experience within the Canadian book publishing and/or periodical and/or music publishing sector.

**M.D. Angus & Associates Graduate Fellowship in Psychology**

Value: \$900

Application deadline: September 30

Tenable: spring term

Terms of reference: One award for a graduate student in psychology for outstanding contributions to the measurement of behavior or innovation of new methods for quantifying behavior.

**Archaeometry Prize**

Value: \$200

Application deadline: April 15

Tenable: summer term

Terms of reference: A prize will be awarded annually in the summer term. The prize will be available to either an undergraduate or graduate student who has shown exceptional scholarship and an interest in the application of physical science to archaeology. Contact Financial Aid and Awards, Student Academic Resources, Maggie Benston Student Services Centre.

**Association of Women in Finance Graduate Scholarship**

Value: \$1,500

Nomination deadline: May 30

Tenable: fall term

Terms of reference: A one-term award for an outstanding student pursuing a master of business administration, with past work experience in the field of finance and future plans to pursue a career in the area of finance.

**David L. Baillie Graduate Fellowships in Molecular and Cellular Biology**

Value: \$1,700 each

Application deadline: May 31

Tenable: fall term

Terms of reference:

Two awards annually, currently valued at \$1,700 each, to students pursuing a PhD degree in the molecular biology and biochemistry department. Students can be pursuing any field of study within the

department and must have completed a minimum of two years towards their PhD program at the time of application.

#### **BCAA Environmental Studies in Transportation Award**

*Value:* \$700

*Application deadline:* September 30

*Tenable:* spring term

*Terms of reference:* One award to recognize outstanding academic performance by a graduate student whose thesis research is related to the study of land-based transportation systems and their relationship to, and improvement of, the environment.

#### **BC Council of Garden Clubs — Mildred Wells Scholarship**

*Value:* \$1,500

*Application Deadline:* May 30

*Tenable:* fall term

*Terms of Reference:* A scholarship for a student in the master of pest management program whose course of studies emphasizes horticultural pest control. The recipient must be a Canadian citizen.

#### **Aphra Behn Graduate Scholarship in English**

*Value:* \$7,000 each

*Application deadline:* May 30

*Tenable:* fall, spring or summer term

*Terms of reference:* One or more, one-term awards supported by the Ann Messenger endowment. For a mature (minimum age 30) female student pursuing a graduate degree program in English and conducting research, preferably in pre-20th century English literature.

#### **B.P. Beirne Prize in Pest Management**

*Value:* \$2,000

*Nomination deadline:* April 30

*Tenable:* Any term

*Terms of reference:* An annual prize with accompanying certificate will be awarded during May each year to the outstanding graduate from the master of pest management program in the three terms immediately preceding Convocation. The award is in honor of the late Dr. B.P. Beirne, founder of the Centre for Environmental Biology at Simon Fraser University. It will be made by nomination by the director of the Centre for Environmental Biology in consultation, as necessary, with faculty. The candidate will be judged equally on his or her scholastic record, professional paper and relevant professional attributes. The student must be nominated by the department by April 30.

#### **Margaret Lowe Benston Memorial Graduate Bursary in Women's Studies**

*Value:* \$1,950

*Application deadline:* May 30

*Tenable:* fall term

*Terms of reference:* A one term award for students in the MA or PhD program in women's studies, with demonstrated financial need.

#### **Brian J. Blaha Memorial Annual Graduate Scholarship in Computing Science**

*Value:* \$1,000

*Application deadline:* May 31

*Tenable:* fall semester

*Terms of reference:* A one semester award to provide financial support to a master's or doctoral student in computing science with work experience in planning-related activities, organizations or involvement.

#### **BMO Graduate Scholarship in Business**

*Value:* \$3,200

*Nomination deadline:* May 30

*Tenable:* fall

*Terms of reference:* For graduate students who are pursuing, or intend to pursue, a graduate degree in business administration at the Segal Graduate School of Business at Simon Fraser University.

#### **Marilyn Bowman Graduate Scholarship in Psychology**

*Value:* \$1,325

*Nomination deadline:* September 30

*Tenable:* spring term

*Terms of reference:* An award for a graduate student who has completed his/her master's degree in clinical psychology and is enrolled in the PhD clinical program in the Department of Psychology. Where possible, preference will be given to a Canadian citizen or landed immigrant. A student will be nominated for the award by the chair of the Department of Psychology.

#### **Gene Bridwell Graduate Scholarship In Special Collections**

*Value:* \$1,000

*Application deadline:* October 15

*Tenable:* spring term

*Terms of reference:* An award for a graduate student who shows evidence of scholarly interest or creative achievement related to Simon Fraser University's contemporary literature collection. Applicants submit an outline of studies and relevance to the Simon Fraser University contemporary literature collection directly to the dean of graduate studies.

#### **Burnaby Rhododendron and Garden Society**

*Value:* \$500

*Application deadline:* September 30

*Tenable:* fall term

*Terms of reference:* A one term award for a student in a master of pest management program. Applicants will be evaluated based on their previous contributions to pest management, performance in graduate course work, conference presentations and community engagement.

#### **Roy L. Carlson Graduate Scholarship in Prehistoric British Columbia Archaeology**

*Value:* \$4,275

*Application deadline:* May 30 (by nomination)

*Tenable:* fall term

*Terms of reference:* A one-term award for a graduate student in archaeology whose research is on the prehistoric archaeology of BC. Eligible theses topics include those based on analysis of BC archaeological collections held by the Simon Fraser University Museum of Archaeology and Ethnology. Where possible, preference will be given to a Canadian citizen or landed immigrant. A student will be nominated for the award by the Department of Archaeology's graduate program committee.

#### **Phyllis Carter Burr Graduate Scholarship in Developmental Biology and Cell Biology**

*Value:* \$2,250 each

*Application deadline:* September 30

*Tenable:* any term

*Terms of reference:* two awards valued at \$2,250 each annually for graduate students in any department who intend to pursue an academic research career specializing in developmental biology and/or cell biology. Currently this would include students in the Departments of Biological Sciences, Molecular Biology and Biochemistry and Biomedical Physiology and Kinesiology in the Faculty of Science. Preference will be given but not restricted to, female applicants.

#### **Cable Television Pioneer Graduate Scholarship**

*Value:* \$825

*Application deadline:* September 30

*Tenable:* spring term

*Terms of reference:* One scholarship for a graduate student in communication specializing in and communication policy.

#### **Canron Limited Sidney Hogg Memorial Graduate Scholarship**

*Value:* \$650

*Application deadline:* September 30

*Tenable:* spring term

*Terms of reference:* Canron Limited has established a scholarship in memory of the late Mr. Sidney Hogg, a Convocation founder of Simon Fraser University. This annual scholarship will be awarded to a worthy and deserving student in postgraduate studies in physics. The spirit of this scholarship is to assist a student who requires financial aid to continue studies and who, at the same time, qualifies in terms of character and scholarship as determined by the physics department and the Senate Graduate Awards Adjudication Committee.

#### **CanWest Global Graduate Fellowship in Communications**

*Value:* \$14,000

*Application deadline:* September 30

*Tenable:* two consecutive terms

*Terms of reference:* One or more scholarships awarded annually to graduate students in the School of Communication with a particular interest in issues related to broadcasting.

#### **Chemistry Alumni Graduate Scholarship**

*Value:* varies

*Application deadline:* September 30 (by nomination)

*Tenable:* spring term

*Terms of Reference:* Awards equal to one term's tuition fees will be disbursed to one or more candidates in a master's or doctoral program in chemistry who do not currently hold an NSERC grant or other award of equal or greater value. Candidates must be nominated for this award by the Department of Chemistry scholarship committee with the approval of the chair of the department.

#### **Chemistry Graduate Research Award**

*Value:* \$1,350

*Application deadline:* May 30

*Tenable:* fall term

*Terms of reference:* One award to recognize superior performance in the first year of graduate studies in chemistry.

#### **David and Rachelle Chertkow Healthy Families Essay Prize**

*Value:* \$500

*Application deadline:* January 30

*Tenable:* summer term

*Terms of reference:* One award for a graduate student in any faculty who is pursuing research in the area of healthy families. The prize will consist of the cash award plus a plaque or certificate. The criteria include demonstrated academic excellence at the undergraduate or graduate level and submission of an essay/research paper on promoting healthy families, or prevention of family violence.

#### **Israel Chertkow Memorial Scholarship in Gerontology**

*Value:* \$525

*Nomination deadline:* September 30

*Tenable:* spring term

*Terms of reference:* Awarded to the top graduating student in the gerontology diploma program. It is made by nomination by the director of the Gerontology Research Centre. Nomination deadline: September 30.

#### **Dr. J.V. Christensen Graduate Scholarship**

*Value:* \$5,100

*Application deadline:* September 30

*Tenable:* spring term

*Terms of reference:* One or more awards for graduate students who are pursuing, or intend to pursue, a graduate degree in history or archaeology.

#### **CIOABC/SAP Graduate Scholarship in Business Administration**

*Value:* \$2,000

*Nomination deadline:* September 30

*Tenable:* spring term



*Terms of reference:* An award for a graduate student in the Faculty of Business Administration preferably with a focus on management information systems. A student will be nominated for the award by the associate dean, MBA programs, Faculty of Business Administration.

#### **Contemporary Literature Graduate Research Award**

*Value:* \$1,000

*Nomination deadline:* May 31

*Tenable:* fall term

*Terms of reference:* Supported from the Robin Blaser Endowment Fund, this award is for a term of research in the contemporary literature collection at Simon Fraser University, for a graduate student in the Department of English. Preference will be given to a doctoral student.

#### **Barry Clark Memorial Graduate Scholarship in Pre-Twentieth Century English Literature**

*Value:* \$1,150

*Application deadline:* September 30

*Tenable:* spring term

*Terms of reference:* One award for a graduate student in English, specializing in pre-twentieth century English literature.

#### **Graduate Award in Communication**

*Value:* \$5,500

*Nomination deadline:* May 30

*Tenable:* fall term

*Terms of reference:* A one-term award for a graduate student pursuing an MA or PhD program in the School of Communication. Applicants must have demonstrated involvement in athletics, campus life and/or community leadership. A student will be nominated for the award by the director of the School of Communication.

#### **CN/Joe Segal Graduate Entrepreneurship Award In Business**

*Value:* \$3,300

*Nomination deadline:* September 30

*Tenable:* spring term

*Terms of reference:* A one term award for a student pursuing a graduate degree in Business Administration. Applicants should demonstrate their involvement in entrepreneurial endeavours by providing their resume and cover letter describing their interest and involvement in entrepreneurial pursuits. An applicant will be nominated for the award by the chair, Faculty of Business Graduate Committee.

#### **Coastal Zone Canada (B.C.) Association Graduate Scholarship in Coastal Studies.**

*Value:* \$725

*Nomination deadline:* May 30

*Tenable:* fall term

*Terms of reference:* One award to provide financial support for a graduate student focussing on community-based approaches to coastal management, specific to issues within the province of BC. Student must be affiliated with the Centre for Coastal Studies.

#### **COGECO Graduate Scholarship in Communications**

*Value:* \$12,225

*Application deadline:* September 30

*Tenable:* spring and summer terms

*Terms of reference:* One two-term award for a graduate student in Communication.

#### **Samuel and Leatrice Cohen Prize in Environmental Physiology**

*Value:* \$825

*Application deadline:* September 30

*Tenable:* spring term

*Terms of reference:* One prize to recognize the best student paper resulting from graduate research in the field of environmental physiology.

#### **The Graduate Prize in Computing Science**

*Value:* \$200

*Nomination deadline:* January 30

*Tenable:* summer term

*Terms of reference:* One prize is awarded to the top graduate student in computing science from income earned from the Graduate Prize in Computing Science endowment fund.

#### **Cook Conference Scholarship**

*Value:* \$1,675

*Application deadline:* January 30

*Tenable:* summer term

*Terms of reference:* One or more scholarships will be awarded to graduate students studying in any field of history on the basis of high academic performance.

#### **Criminology Graduate Student Research and Education Grants**

*Value:* maximum of \$250 each

*Application deadline:* January 15, September 15

*Tenable:* summer or spring term

*Terms of reference:* Travel grants for graduate students in the School of Criminology to travel to conduct research or participate at a conference, workshop or attend a course.

#### **Alan Dakin Annual Graduate Award in Hydrogeology**

*Value:* \$500

*Application deadline:* May 30

*Tenable:* fall term

*Terms of reference:* To provide support for a graduate student in a master's or doctoral program in hydrogeology in the Department of Earth Sciences, geography or master of resource management program who shows promise of making a contribution to the evaluation, protection and sustainable use of groundwater resources in BC. Applicants will be evaluated based on their previous contributions to hydrogeology, performance in graduate course work, conference presentations and community engagement.

#### **Isabel Dawson Memorial Scholarship in Gerontology**

*Value:* \$575

*Application deadline:* September 30

*Tenable:* spring term

*Terms of reference:* To provide financial recognition to an outstanding student engaged in research or study in gerontology.

#### **Manuela Dias Memorial Scholarship in Publishing Studies**

*Value:* \$500

*Application deadline:* September 30

*Tenable:* spring term

*Terms of reference:* A one-term award for a student entering or pursuing a master's degree in publishing studies. Applicants must submit at least one short sample of professional, academic or business writing or a portfolio piece.

#### **Chad Day Graduate Fellowship in Resource Management**

*Value:* \$5,000

*Application deadline:* May 30

*Tenable:* fall and spring terms

*Terms of reference:* One award for a graduate student in the School of Resource and Environmental Management specializing in environmental and resource management problems in British Columbia.

#### **Gordon Diewert Graduate Scholarship in Kinesiology**

*Value:* \$2,000

*Application deadline:* May 30

*Tenable:* fall term

*Terms of reference:* Awarded to a graduate student on the basis of high academic performance and study in the area of motor learning. This fund has been established in honor of Dr. Gordon Diewert for his

contribution to the Department of Biomedical Physiology and Kinesiology at Simon Fraser University.

#### **Downtown Vancouver Association Graduate Awards in Urban Studies**

*Value:* \$1,125

*Nomination deadline:* May 30

*Tenable:* fall term

*Terms of reference:* A one-term award to recognize and reward an outstanding student pursuing a graduate degree in urban studies who submits the best essay or project in a given year. A student must be nominated for the award by the chair of the department.

#### **Doug Drummond Research Fellowship**

*Value:* \$2,775

*Application Deadline:* May 30

*Tenable:* fall term

*Terms of Reference:* A one-term award for a graduate student pursuing research on subjects related to the planning and management of the environment and infrastructure of the City of Burnaby. The fellowship is granted in recognition of the work of Doug Drummond, Mayor of the City of Burnaby (1996-2002) in building effective relationships between the City of Burnaby and Simon Fraser University.

#### **Robert Hancock Dunham Memorial Scholarship in English**

*Value:* \$3,725

*Application deadline:* May 30

*Tenable:* fall term

*Terms of reference:* One award for a student pursuing a graduate degree program in the Department of English. Students must be nominated for this award by the chair of the department.

#### **Ebco/Eppich Graduate Scholarships**

*Value:* \$700-\$1,400 each

*Nomination deadline:* September 30

*Tenable:* spring term

*Terms of reference:* One or more scholarships valued between \$700 and \$1,400 each are available to graduate students in computing science, engineering science, resource management, kinesiology, physics, math, statistics, and interactive arts and technology. These are:

The Robert, Edwin, Richard and Elizabeth Eppich Graduate Scholarship  
The Helmut Eppich Graduate Scholarship  
The Hugo Eppich Graduate Scholarship  
The Gordon, Monica, and Sonia Eppich Graduate Scholarship  
The Kaltenecker Family Graduate Scholarship  
The Ralph M. Howatt Family Graduate Scholarship  
The Century 21/Charlwood Family Graduate Scholarship  
The Frieder Karl Kempe Graduate Scholarship  
The Cy and Emerald Keyes Graduate Scholarship  
The Franklin D. and Helen K. Van Pykstra Graduate Scholarship  
The Bel Construction Ltd. Graduate Scholarship  
The Clark, Wilson Graduate Scholarship  
The Canadian Liquid Air Ltd. Graduate Scholarship  
The Hanson Inc. Graduate Scholarship  
The Deskin Sales Graduate Scholarship  
The Jardine Rolfe Ltd. Graduate Scholarship  
The Nova-Tech Engineering Inc. Graduate Scholarship  
The Westak International Sales, Inc. Graduate Scholarship  
The Transco Tool and Equipment Ltd. Graduate Scholarship  
The ABC Recycling Ltd. Graduate Scholarship  
The Robar Industries Limited Graduate Scholarship  
The Opus Building Corporation Graduate Scholarship  
Borden Ladner Gervais Graduate Scholarship  
The Pacific Metals/Leon Lotzkar Memorial Graduate Scholarship

The Backwater Industries/Jost Family Graduate Scholarship  
 The Global (West) Wholesalers Ltd. Graduate Scholarship  
 The Kreykenbohm Family Graduate Scholarship  
 The Anna Kreykenbohm Graduate Scholarship  
 The Wilhelm Kreykenbohm Graduate Scholarship  
 The Michael and Grace Kreykenbohm, Karen Kreykenbohm Montgomery, and Anthony Montgomery Graduate Scholarship  
 Praxair Inc. Graduate Scholarship

Students are recommended for these awards by the associate dean of the Faculty of Applied Sciences to the dean of graduate studies. Application deadline: September 30.

**Editors' Association of Canada/Association Canadienne de Reviseurs, BC Branch Graduate Scholarship in Publishing Studies**  
 Value: \$250

Application deadline: May 30

Tenable: fall term

Terms of reference: A one-term award for a student pursuing a master of publishing degree. Application must be accompanied by a sample of professional, academic or business writing or a portfolio piece.

**Emergency Preparedness Conference Scholarship in Emergency Communications**  
 Value: \$3,000

Application deadline: September 30

Tenable: spring term

Terms of reference: An award to provide financial support for a graduate student in the School of Communication or other appropriate area in the emergency communications field, pursuing an applied research project in the area of emergency/disaster management.

**Faculty of Education Field Programs Research Fellowships**

Value: \$2,400 (Master's) \$2600 (PhD)

Application Deadline: by the end of the second month of the term preceding the term of tenure

Tenable: any term

Terms of Reference: A one-term award for students who have identified the topic of "teacher inservice professional development" as their area of interest and plan to undertake a thesis in which the investigation is closely related to the work of field programs in the Faculty of Education. Students may receive the award only once during the term of their graduate program.

**Dr. E.A. Fattah Graduate Scholarship in Criminology**

Value: \$2,300

Application deadline: September 30

Tenable: spring term

Terms of reference: An award to a graduate student in Criminology pursuing graduate work in the area of victimology. Student should show promise of outstanding achievement at the graduate level with particular emphasis on intellectual ability, originality and ability in research.

**Dr. Marguerite Fauquency Graduate Scholarship in French**

Value: \$975

Application deadline: September 30 or January 30

Tenable: spring or summer term

Terms of reference: One award to a graduate student who has completed at least one term of graduate work at Simon Fraser University in the area of French linguistics, varieties of French, French-based Creoles, French literature, or French studies.

**Barbara Ferrier Chemistry Research Award**

Value: \$1,075

Nomination deadline: May 30

Tenable: fall term

Terms of reference: One award for a student in a graduate program in chemistry to help with the costs associated in attending an academic conference. Students will be evaluated based on their previous annual progress. Evidence of a suitable conference with a high impact for the student's program must be included as part of the nomination package, as well as a concise outline of the proposed benefits of attending the conference. A student will be nominated for the award by the graduate program committee in the Department of Chemistry.

**Diana Filer/Quirks & Quarks Graduate Award for Best PhD Thesis**

Value: varies

Nomination deadline: April 30

Tenable: June convocation

Terms of reference: The purpose of this award is to recognize the best PhD thesis by a convocating doctoral student. The award recipient will be announced by the dean of graduate studies during the convocation ceremonies each spring.

**Professor Thelma Finlayson Graduate Fellowship**

Value: \$6,000

Application deadline: September 30

Tenable: spring term

Terms of reference: Professor Thelma Finlayson has established a fellowship to be offered to graduate students pursuing studies toward the master of science degree in pest management. Preference will be given to students who are studying entomology.

**French Memorial Graduate Scholarship**

Value: \$1,675

Application deadline: May 30

Tenable: fall term

Terms of reference: One award for a graduate student in French.

**Mahatma Gandhi Memorial Scholarship in Kinesiology**

Value: \$850

Application deadline: January 30

Tenable: summer term

Terms of Reference: A scholarship will be awarded to a graduate student in the Department of Biomedical Physiology and Kinesiology whose research interests are in the areas of nutrition and/or aging. Preference may be given to students who are considered to be deserving and financially needy.

**Dr. Ellen Gee Memorial Graduate Scholarship for Excellence**

Value: \$1,850

Nomination deadline: September 30

Tenable: spring term

Terms of reference: A one-term award for a student in their first year of study, pursuing a graduate degree in sociology or anthropology and whose research is in the area of family, gender, ethnicity, ageing, health and/or social policy. A student must be nominated for the award by the chair of the department.

**Glen Geen Graduate Scholarship in Marine Biology**

Value: \$775

Application deadline: September 30

Tenable: spring term

Terms of reference: One award for a graduate student in biological sciences with a concentration on marine biology.

**Michael Geller Graduate Scholarship in Urban Development**

Value: \$4,000

Application Deadline: May 30

Tenable: fall term

Terms of Reference:

A one-term award to provide financial support to a master's or PhD student whose research focuses on urban development.

**German Canadian Benevolent Society of British Columbia Aulinger Award in Gerontology**

Value: \$600

Application deadline: September 30

Tenable: spring term

Terms of reference: The Aulinger Award in Gerontology provides financial support for a graduate student pursuing a master's degree in gerontology. Emphasis is on high academic performance and a research focus on aging and the built environment or on health promotion and aging.

**Gloria Gutman Conference Travel Award**

Value: \$800

Nomination deadline: September 30

Tenable: spring term

Terms of reference: For a student in a graduate program in the Department of Gerontology to help with the costs associated with participating in an academic conference whose abstract has been accepted for presentation at a suitable conference on aging.

**Laurine Harrison Graduate Thesis Award**

Value: \$1,675

Application deadline: May 31

Tenable: fall, spring or summer term

Terms of reference: Eligible students must be enrolled in a master's program in the Faculty of Arts and Social Sciences, have completed all course work and comprehensive exams (if applicable), and are in the final, thesis-writing term of a master's program.

**Faculty of Health Sciences Faculty and Staff Community Health Practice Awards**

Value: \$500-\$1,000

Application deadline: January 30

Tenable: summer term

Terms of reference: Up to ten achievement awards per year ranging in value between \$500 and \$1,000 will be given to graduate students in the Faculty of Health Sciences who are applying for a full-time practicum term for the summer term and intend to use the award to help defray costs to participate in field research in health sciences.

**Sidney Hogg Memorial Graduate Scholarship**

Value: \$700

Application deadline: September 30

Tenable: spring term

Terms of reference: Mrs. Sidney Hogg has established an endowment, the earned income therefrom to provide a perpetual scholarship annually. This scholarship is to be awarded to a graduate student in science who needs financial assistance in order to continue studies and who is qualified in terms of character and scholarship. The award may be held in conjunction with other awards.

**HSBC Graduate Award in Business**

Value: \$4,300

Nomination deadline: May 31

Tenable: fall and spring terms

Terms of Reference: A two-term award for a graduate student who is pursuing, or intends to pursue, a graduate degree in business administration at the Segal Graduate School of Business. Applicants must demonstrate financial need and will be nominated for the award by the dean of the Faculty of Business Administration.

**HSBC Graduate Scholarship in Global Asset & Wealth Management**

Value: \$8,270 (over 2 academic terms)

Nomination deadline: May 31

Terms of reference: For a student in the global asset and wealth management program at the Segal Graduate School of Business.

**Don and Pat Hudson Scholarship in International Business Relations**

Value: \$1,275

*Nomination deadline:* January 30

*Tenable:* summer term

*Terms of reference:* One award for a student studying international business relations as part of their graduate business degree in the Faculty of Business Administration. Students will be nominated for the award by the director of the MBA program and the associate dean of business administration.

**Imperial Order of the Daughters of the Empire (IODE) Seaman Morley Scott Memorial Graduate Scholarship**

*Value:* \$325

*Application deadline:* September 30

*Tenable:* spring term

*Terms of reference:* A graduate scholarship in memory of Dr. Seaman Morley Scott will be awarded annually to a female graduate student who is a Canadian citizen who demonstrates high meritorious performance in her academic program.

**International Reading Association Scholarship**

*Value:* \$650

*Application deadline:* January 30

*Tenable:* summer term

*Terms of reference:* One scholarship awarded to a full or part time graduate student pursuing studies in literacy education.

**Elsie Jang Graduate Fellowships in Contemporary Arts**

*Value:* \$2,500

*Application deadline:* May 31

*Tenable:* fall term

*Terms of reference:* One or more awards for graduate student(s) pursuing any field of study in the School for the Contemporary Arts.

**Daniel Janzen Memorial Graduate Scholarship**

*Value:* \$2,100

*Application deadline:* September 30

*Tenable:* spring term

*Terms of reference:* Established in memory of Daniel Janzen by his friends and family. To provide financial support to a graduate student studying for an MA degree in economics, public policy, or political science, or an MBA in business administration. Preference, when possible, will be given to a student coming to Simon Fraser University from the University College of the Fraser Valley.

**Billy Jones Graduate Award in Physics**

*Value:* \$4,150

*Application deadline:* September 30 (by nomination)

*Tenable:* spring term

*Terms of reference:* An award for a doctoral student who has completed the first year of the physics doctoral program at Simon Fraser University. Students must be nominated for this scholarship by the chair of the department.

**The John Juliani Graduate Fellowship in Theatre or Film**

*Value:* \$2,500

*Nomination deadline:* May 31

*Tenable:* fall term

*Terms of reference:* To provide financial support for students who are pursuing a graduate degree in theatre or film in the School for the Contemporary Arts.

**Kaiser Foundation Graduate Scholarship in Engineering Science**

*Value:* \$5,950

*Nomination deadline:* May 30

*Tenable:* fall term

*Terms of reference:* To provide financial support for a student pursuing a master's or PhD degree in the School of Engineering Science. A student will be nominated for the award by the chair of the School of Engineering Science.

**Dr. Tai Whan Kim Memorial Graduate Scholarship in Languages and Linguistics**

*Value:* \$1,335

*Application deadline:* May 30

*Tenable:* fall term

*Terms of reference:* One award for a graduate student pursuing a master's or PhD degree in romance languages, romance linguistics or a related field.

**Leon J. Ladner Graduate Scholarship in B.C. History**

*Value:* \$500

*Application deadline:* January 30

*Tenable:* summer term

*Terms of reference:* One or more scholarships for graduate students possessing high academic standing and a special aptitude for research and wishing to undertake postgraduate work in the field of British Columbian history.

**Lambda Alpha International Vancouver Annual Graduate Award**

*Value:* \$500

*Application deadline:* May 30 (by nomination)

*Tenable:* fall term

*Terms of reference:* One award for a graduate student in the master of urban studies program.

**Law Foundation Graduate Scholarship in Restorative Justice**

*Value:* \$2,700

*Nomination deadline:* May 30

*Tenable:* fall term

*Terms of Reference:* For a student who is pursuing or intends to pursue a graduate degree in criminology focusing on research conducted within the Centre for Restorative Justice. A student will be nominated for the award by the co-directors of the Centre for Restorative Justice.

**Peter Legge Graduate Volunteer Leadership Award In Business**

*Value:* \$3,125

*Nomination deadline:* May 30

*Tenable:* fall term

*Terms of reference:* A one term award for a student entering or pursuing a graduate degree in business administration at the Segal Graduate School of Business. To be eligible, candidates should demonstrate their involvement in unpaid volunteer activities by providing their resume and cover letter describing their volunteerism, the length of service and time commitment dedicated to such interests. Applicants must be nominated for the award by the dean of the Faculty of Business Administration.

**Linguistics Graduate Scholarship**

*Value:* \$500

*Application Deadline:* May 30

*Tenable:* fall term

*Terms of Reference:*

To provide financial support for a student in a master's program in linguistics. Preference will be given to candidates who have not received the award before.

**London Drugs 60th Anniversary Awards**

*Value:* \$1,000

*Application Deadline:*

*Tenable:* any semester

*Terms of Reference:*

For graduate or undergraduate students in any Faculty whose volunteer activities have made a significant contribution to the development and/or improvement of campus community life. Candidates must include demonstrated involvement in unpaid volunteer activities in their resume and a cover letter describing their volunteerism, length of service and time committed to such interests.

**H.R. MacCarthy Graduate Bursary**

*Value:* \$7,600

*Application deadline:* September 30

*Tenable:* spring term

*Terms of reference:* The H.R. MacCarthy Bursary Endowment Fund provides financial support for a graduate student in biological sciences with preference given to a student studying the biology and management of pest organisms. The award will be based on financial need, good academic standing, and promise of service to mankind through the application of science.

**Marie Magrega Memorial Graduate Award in Gerontology**

*Value:* \$500

*Application deadline:* September 30

*Tenable:* any term

*Terms of reference:* Established in memory of Marie Magrega by her son, Dr. Dennis Magrega, to promote and encourage the study of gerontology. One award will be disbursed annually to a graduate student enrolled in the MA program in gerontology. The student must be nominated by the director of the gerontology program.

**Department of Mathematics Graduate Scholarship**

*Value:* \$975

*Nomination deadline:* September 30

*Tenable:* spring term

*Terms of reference:* For a student in a graduate program in the Department of Mathematics. The student must be nominated for this award by the chair of the Department of Mathematics.

**Temple Maynard Graduate Scholarship in English**

*Value:* \$10,000

*Nomination deadline:* May 30

*Tenable:* fall, spring or summer

*Terms of reference:* A one term award for a student in a graduate program in English. One or more scholarships will be awarded each year.

**Temple Maynard Memorial Graduate Bursary in English**

*Value:* \$2,225

*Application deadline:* May 30

*Tenable:* fall

*Terms of reference:* One bursary for a graduate student in English.

**MBB Alumni Graduate Scholarship**

*Value:* varies

*Application deadline:* September 30

*Tenable:* any term

*Terms of reference:* A one term award for a student who is in the first nine terms of a master's program or in the first 15 terms of a doctoral program and who is conducting research in molecular biology and biochemistry.

**Colin McPhee Graduate Scholarship in Fine Arts**

*Value:* \$6,150

*Application deadline:* April 15

*Tenable:* fall term

*Terms of reference:* A one-term award for a student pursuing a graduate degree in any art discipline in the School for the Contemporary Arts. A student who applies for a graduate fellowship will automatically be considered for this scholarship.

**Ann and William Messenger Graduate Fellowships in English**

*Value:* \$7,000

*Nomination deadline:* May 30

*Tenable:* fall, spring or summer term

*Terms of reference:* A one term award for student(s) pursuing a graduate degree (M.A. or Ph.D.) in English. Up to three awards will be granted in a given year. Students must be nominated for this award by the chair of the department.

**Methanex Graduate Scholarship in International Marketing***Value:* \$5,000 per year*Nomination deadline:* January 30*Tenable:* summer term*Terms of reference:* One award per year to an outstanding student pursuing a specialist master of business administration degree with a focus on international marketing.**D.B. Miner Graduate Scholarship in Computing Science***Value:* \$850*Application deadline:* September 30*Tenable:* spring term*Terms of reference:* One award per year for a student in a graduate program in computing science. When possible, preference will be given to a graduate student working in the fields of database or data mining. Where possible, preference will be given to a Canadian citizen or landed immigrant.**Muslim Studies Graduate Student Travel Award***Value:* \$800*Application deadline:* September 30*Tenable:* spring term*Terms of reference:* For a student enrolled in a master's or doctoral thesis program in the Faculty of Arts and Social Sciences which requires travel abroad to undertake research on some aspect of a Muslim society or culture, supported by the Dossa Endowment Fund.**Mutual Fire Insurance Company of BC Graduate Scholarship in Biological Sciences***Value:* \$4,575*Nomination deadline:* September 30*Tenable:* spring term*Terms of reference:* A one term award to a student pursuing a master's or PhD degree program in biology in a program of studies with a focus on research applicable to British Columbia's poultry, dairy, ranch and/or crop agricultural industries. A student will be nominated for the award by the chair of the Department of Biological Sciences.**R. Jack Nance Memorial Graduate Scholarship in Archaeology***Value:* \$2,500*Application deadline:* September 30*Tenable:* spring term*Terms of reference:* A one term award for a student pursuing a graduate degree in archaeology who has completed at least one term of their graduate program.**National Council of Jewish Women (Vancouver Section) Graduate Scholarship in Women's Studies***Value:* \$600*Application deadline:* September 30*Tenable:* spring term*Terms of reference:* One scholarship of approximately \$700 for a graduate student in the first, second or third term of women's studies.**Hemingway Nelson Architects Graduate Scholarship***Value:* \$1,550*Application deadline:* September 30*Tenable:* spring term*Terms of reference:* One award for a graduate student carrying out research in the Department of Molecular Biology and Biochemistry.**Marshall Noble Memorial Graduate Bursary in Chemical Ecology***Value:* \$1,325*Application deadline:* September 30*Tenable:* spring term*Terms of reference:* One bursary for a graduate student in the Chemical Ecology Research Group in the Faculty of Science.**Mark Nussbaum Graduate Research Fellowships in Gerontology***Value:* \$2,000 or \$4,000*Application deadline:* May 31*Tenable:* fall term*Terms of reference:* One award valued at \$4,000 or two awards at \$2,000 each, to master's or doctoral students pursuing any field of study within the gerontology graduate program. Preference will be given to students who propose research that utilizes the Dr. Tong Louie Living Laboratory as part of their thesis or project research.**Dr. M. Sheila O'Connell Graduate Scholarship in Children's Literature***Value:* \$1,500*Nomination deadline:* September 30*Tenable:* spring term*Terms of reference:* One scholarship will be awarded in the spring term to a graduate student majoring in the field of children's literature within the Faculty of Education or the Department of English. Students will be nominated by the Faculty of Education and the Department of English.**Dr. M. Sheila O'Connell Graduate Publication Scholarship***Value:* \$1,000*Application deadline:* September 30*Tenable:* spring term*Terms of reference:* For a student pursuing a graduate degree with a concentration on children's literature within the Faculty of Education or the Department of English. The scholarship is intended to assist candidates in writing and publishing a children's story.**Anne Peters Pinto Graduate Scholarship in Women's Studies***Value:* \$2,150*Application deadline:* September 30*Tenable:* spring term*Terms of reference:* One award for a graduate student in women's studies.**Petro-Canada Graduate Scholarship in Earth Sciences***Value:* \$3,100*Application deadline:* September 30*Tenable:* spring term*Terms of reference:* One scholarship to a student pursuing a graduate degree in earth sciences in the Faculty of Science.**Pivotal Scholarship for the Management of Technology MBA Program***Value:* \$10,000*Nomination deadline:* September 30*Tenable:* spring term*Terms of reference:* One scholarship to attract and provide financial support for a student entering the management of technology MBA program. Candidates must have a minimum of two years of employment experience in the high-tech industry in a professional capacity. Applicants must be nominated for the award by the academic director of MBA programs and the associate dean in the Faculty of Business Administration.**Planning Institute of British Columbia (PIBC) Annual Graduate Scholarship***Value:* \$3,000*Application deadline:* May 31*Tenable:* fall*Terms of reference:* One award annually to a student pursuing a master of resource management (planning) degree who is involved in student planning activities and/or organizations and is a student

member in good standing of the PIBC as confirmed by the institute.

**Master's in Public Policy Scholarship***Value:* \$1,825*Nomination deadline:* May 30*Tenable:* fall term*Terms of reference:*

One award for a student enrolled in the master of public policy program with demonstrated evidence of contributions to the field of public policy. Where possible, preference will be given to a Canadian citizen or landed immigrant. A student will be nominated for the award by the graduate program committee in the master of public policy program.

**Dr. L. B. Peter Rae Memorial Award in Business Ethics***Value:* \$700*Application deadline:* September 30*Tenable:* spring term*Terms of reference:* One award to recognize a student pursuing an MBA or EMBA and whose thesis or MBA project addresses issues in business ethics.**Dr. Donald, Eleanor and Laurie Rix Biotechnology Management of Technology MBA Graduate Entrance Scholarship***Value:* \$15,000*Nomination deadline:* May 30*Tenable:* fall, spring, summer terms*Terms of reference:* A three-term award for a student entering the biotechnology stream of the management of technology MBA program in the Faculty of Business Administration. A student will be nominated for the award by the associate dean, graduate programs, Faculty of Business Administration, Simon Fraser University.**Dr. Donald, Eleanor and Laurie Rix Biotechnology Management of Technology MBA Graduate Scholarship***Value:* \$5,000*Nomination deadline:* May 30*Tenable:* fall term*Terms of reference:* A one-term award available to two graduate students per year in the biotechnology stream of the management of technology MBA program. Students will be nominated for the awards by the associate dean, graduate programs, Faculty of Business Administration, Simon Fraser University.**Rogers Communications Inc. Graduate Scholarship in Communication***Value:* \$4,875*Application deadline:* September 30*Tenable:* spring term*Terms of reference:* One or more scholarship(s) awarded annually to graduate students in the School of Communication with a particular interest in issues related to broadcasting or cable.**Rogers Group Financial – Clay Gillespie Annual Graduate Scholarship***Value:* \$10,000*Nomination deadline:* May 30*Tenable:* fall and spring terms*Terms of reference:* For a graduate student who is pursuing or intends to pursue a graduate degree in the global asset and wealth management program at the Segal Graduate School of Business.**Rotary Club of Burnaby Scholarship***Value:* \$1,675*Application deadline:* September 30*Tenable:* spring term*Terms of reference:* One or more scholarships of \$1,000 have been established by the Rotary Club of Burnaby for a graduate student in the Faculty of Education in recognition of scholarly merit and the advancement of education practice.

**Robert Russell Family/First Nations Graduate Award**

Value: \$4,300

Application deadline: May 30

Tenable: fall term

*Terms of reference:* To provide financial support for a First Nations or Aboriginal student who is entering or pursuing graduate studies in the Faculty of Education, the Faculty of Arts and Social Sciences, the Faculty of Science, the Faculty of Health Sciences, the Faculty of Applied Sciences, the Faculty of Communication, Art and Technology, and the Faculty of Environment.

**Phillip Rutherford/Harper Collins Memorial Bookstore Internship**

Value: \$1,000

Application deadline: September 30

Tenable: spring term

*Terms of reference:* This award provides a bookstore internship for a student in the master of publishing program, normally in BC for three to four weeks.

**William and Jane Saywell Graduate Scholarship in History**

Value: \$2,850

Application deadline: January 30

Tenable: summer term

*Terms of reference:* One or more awards for graduate students in history.

**Scotiabank Graduate Scholarship for Women**

Value: \$4,600

Nomination deadline: May 30

Tenable: fall and spring

*Terms of reference:* A two term award for a female graduate student in a master of business administration program. Preference will be given to a candidate who is, or has been, an entrepreneur, or who plans to study entrepreneurship as part of her degree.

**Shahrgon Annual Graduate Award in Critical Independent Journalism Studies for the Promotion of Democratic Citizenship**

Value: \$2,000

Nomination deadline: May 30

Tenable: fall term

*Terms of reference:* To encourage and recognize students pursuing graduate studies in critical independent journalism in the School of Communication for the promotion of ideas and ideals of democratic citizenship. Preference will be given to studies that relate to Persian-speaking communities in Canada.

**Fung Chan Yee Shan Memorial Scholarship in Gerontology**

Value: \$1,050

Application deadline: September 30

Tenable: spring term

*Terms of reference:* An annual scholarship for a student pursuing an MA degree in gerontology.

**Randy Sitter Annual Graduate Scholarship in Statistics and Actuarial Science**

Value: \$1,000

Application deadline: January 30

Tenable: summer term

*Terms of reference:* To honor a student of distinction in a master's or doctoral program in statistics and actuarial science who possesses some of the qualities that were hallmarks of Professor Sitter's life: a demonstrated passion for research, an untiring work ethic, support for his peers and colleagues, fair-mindedness and a hatred of injustice.

**Stevenson Graduate Scholarship in Political Science**

Value: \$4,500

Application deadline: May 30 (by nomination)

Tenable: fall term

*Terms of reference:* One award for a student pursuing a master's or doctoral degree in political science,

Promise of outstanding achievement at the graduate level with particular emphasis on intellectual ability, originality and ability in research. The student must be nominated by the political science department for the award.

**The Sulzer Bingham Pumps Inc. Graduate Scholarship**

Value: \$1,000

Application deadline: September 30

Tenable: spring term

*Terms of reference:* One award for a student pursuing a graduate degree in the Faculty of Science or the Faculty of Applied Sciences.

**TCG International Graduate Scholarship in Business Administration**

Value: \$9,325

Application deadline: September 30

Tenable: spring and summer terms

*Terms of reference:* A two term award for a graduate student in the master of business administration program specialising in marketing, international business or policy analysis.

**Ethel Barbara Tuck Graduate Scholarship in Education**

Value: \$12,700

Application deadline: September 30

Tenable: spring and summer terms

*Terms of reference:* A two-term award for a graduate student pursuing a master's degree in education who intends to practice as a teacher specializing in remedial reading with children or youth experiencing reading difficulties.

**University Women's Club of Vancouver Graduate Scholarship in Earth Sciences**

Value: \$1,050

Application deadline: May 30

Tenable: fall term

*Terms of reference:* A one term award for a female student pursuing a master's or doctoral degree in the Department of Earth Sciences.

**VanCity Environmental Graduate Scholarship**

Value: \$5,375

Application deadline: May 30

Tenable: fall and spring terms

*Terms of reference:* A two-term scholarship tenable in the fall and spring terms, for a graduate student enrolled in the natural resources management program who is researching environmental and resource management problems in British Columbia.

**Vancouver East Rotary Graduate Scholarship in Education**

Value: \$3,475

Application deadline: May 31

Tenable: fall term

*Terms of reference:* For a graduate student enrolled in the PhD program in the Faculty of Education.

**Viswanathan-Delord Graduate Endowment Fund**

Value: \$600

Application deadline: January 30 or May 30

Tenable: fall or summer term

*Terms of reference:* One award for a graduate student working in the area of French literature.

**Waterhouse Graduate Fellowship in Organizational Change and Innovation**

Value: \$2,000

Nomination deadline: May 30

Tenable: fall or spring

*Terms of reference:* For a graduate student enrolled in any faculty at Simon Fraser University whose research focus is organizational change and innovation.

**Lis Welch Graduate Scholarship in Education**

Value: \$2,550

Application deadline: September 30

Tenable: three consecutive terms

*Terms of reference:* For a master's or PhD student in the Faculty of Education. Preference will be given to a Canadian citizen or landed immigrant.

**Garfield Weston Foundation/BC Packers Limited Graduate Fellowship in Marine Sciences**

Value: \$16,400

Application deadline: May 30

Tenable: fall, spring, summer terms

*Terms of reference:* A one year award for a graduate student in the department of biological sciences pursuing science-based educational, research and/or development activities that support or enhance the aquaculture and/or commercial wild fishing industries in Canada.

**Weyerhaeuser Molecular Biology Graduate Scholarship**

Value: \$6,250 (MSc)

Application deadline: September 30

Tenable: spring term

*Terms of reference:* One or more scholarships for master of science students carrying out research in the Department of Molecular Biology and Biochemistry.

**Madame Justice Bertha Wilson Graduate Bursary**

Value: \$525

Application deadline: September 30

Tenable: spring term

*Terms of reference:* One bursary is available to a graduate student pursuing research that has a focus on the feminist analysis of law and society. Academic excellence and financial need will be considered.

**Whitford/Stevenson Graduate Scholarship in Canadian Literature**

Value: \$3,650

Nomination deadline: May 30

Tenable: fall term

*Terms of reference:* One award for a student pursuing a graduate degree program with a specialization in the study of literature and/or comparative literature with an emphasis on Canadian literature.

**Lang Wong Memorial Endowment Scholarship in Economics**

Value: \$1,450

Application deadline: January 30

Tenable: summer term

*Terms of reference:* One scholarship to a graduate student in economics who has completed one term of graduate work and is a citizen of an Asian developing country.

**Lang Wong Memorial Endowment Scholarship in Engineering**

Value: \$1,450

Application deadline: January 30

Tenable: summer term

*Terms of reference:* One scholarship awarded annually to a graduate student in engineering who has completed one term of graduate work and is a citizen of an Asian developing country.

**Dr. John Yorston Memorial Graduate Scholarship in Pest Management**

Value: \$1,575

Application deadline: May 30

Tenable: fall term

*Terms of reference:* One award for a graduate student in the master of pest management specializing in crop protection, plant pathology and nematology.

**University Administered External Awards****Accelerate BC Graduate Research Industrial Internship Program**

Value: \$15,000 - \$10,000 stipend with a \$5,000 research grant

*Application deadline:* none

*Tenable:* fall, spring or summer term

Available to all faculties, schools and departments at BC universities. It partners graduate student and postdoctoral fellow interns and their supervising professors in any discipline with BC companies, hospitals, government agencies and not-for-profit organizations. Graduate student interns spend 50% of their time over four months on site with the industrial partner researching an issue of interest to all parties. The balance of the intern's time is spent at Simon Fraser University further advancing the research under the guidance of their faculty supervisor. The program is administered by MITACS, a federally-funded Network of Centres of Excellence. Apply through [www.mitacsinternships.ca](http://www.mitacsinternships.ca)

#### **Action Canada Fellowships**

*Value:* varies

*Nomination deadline:* December, to the Office of the Dean of Graduate Studies

*Terms of reference:* Action Canada is seeking nominations for candidates who are in the early years of pursuing their graduate program, who have the promise to be future Canadian leaders and who will benefit by the study of leadership and public policy issues. The fellowship year is to be undertaken in conjunction with their graduate studies. Candidates must be nominated for this award. For full information about how to submit a nomination package to the dean of graduate studies, visit [www.actioncanada.ca](http://www.actioncanada.ca)

#### **Canadian Institutes of Health Research (CIHR) Sir Frederick Banting and Dr. Charles Best CGS M Scholarships**

*Value:* \$17,500 year

*Application deadline:* November 1

*Tenable:* annual

*Terms of reference:* The Canada Graduate Scholarships Master's Awards administered by CIHR are intended to provide special recognition and support to students who are pursuing or intend to pursue a master's degree in a health related field in Canada. Candidates are expected to have an exceptionally high potential for future research achievement and productivity. Candidates must have completed or be in the last year of a bachelor's degree or have been enrolled for no more than 10 months as a full time student in a master's program. Only those students engaged in full time master's programs in which research is a major component and who are studying under the supervision of faculty members holding research funds obtained through a competitive peer reviewed process are eligible to apply.

#### **Student Led Research Grants in the Social Policy Field**

*Value:* \$1,500

*Application deadline:* November

*Tenable:* fall, spring or summer

*Terms of reference:* 33 student grants valued at \$1,500 each are funded by the province's Ministry of Labour and Citizens' Services through its Cross Government Research Policy and Practice (CGRPP) Branch. Designed to help graduate students at Simon Fraser University defray costs associated with conducting research on key social issues. Contact the Office of the Dean of Graduate Studies for further details.

#### **Imperial Order of the Daughters of the Empire War Memorial Doctoral Scholarships**

*Value:* \$12,000; \$15,000

*Application deadline:* December 1

*Terms of reference:* Five scholarships will be offered for study towards a doctoral degree. A master's degree or equivalent must be completed or in progress at time of application).

*Eligibility:* Canadian citizens; must have done or be doing postgraduate work.

*Value:* \$12,000 for study in Canada, \$15,000 for study within the Commonwealth. Note: A candidate must apply in the province of the university from which he/she has graduated. Further information is available from the Office of the Dean of Graduate Studies.

#### **Mackenzie King Open Scholarships**

*Value:* \$10,000 (subject to change)

*Application deadline:* February 1 to dean of graduate studies.

*Terms of reference:* One award will be offered for study in any field at any university.

*Eligibility:* graduates of any Canadian university.

#### **Mackenzie King Travelling Scholarships**

*Value:* \$11,000 (subject to change)

*Application deadline:* February 1 to dean of graduate studies.

*Terms of reference:* Four scholarships are available for study in the fields of international or industrial relations (including the international or industrial aspects of law, history, politics and economics).

*Eligibility:* Graduates of any Canadian university who propose to engage in postgraduate study of international relations or industrial relations in the United States or the United Kingdom.

#### **Minerva Foundation**

*Value:* \$10,000

*Application deadline:* May 1

*Tenable:* fall and spring terms

*Terms of reference:*

A two-term award for a mature, single woman in a graduate or undergraduate program at Simon Fraser University. Granted on the basis of financial need and academic proficiency.

#### **Natural Sciences and Engineering Research Council Awards**

*Value:* varies (see below)

*Application deadline:* fall

*Tenable:* annual

*Terms of reference:* NSERC offers post-graduate awards and post doctoral fellowships in science including interdisciplinary research, physical geography and experimental psychology, and engineering. Canadian citizens and permanent residents who at the time of application are residing in Canada are eligible. Five categories of post-graduate awards are available:

##### **NSERC PGS M**

*Value:* \$17,300 for one year

*Application deadline:* fall

*Tenable:* annual

*Terms of reference:* available to students for the first year of post-graduate study at the master's level.

##### **NSERC Alexander Graham Bell CGS M**

*Value:* \$17,500 for one year

*Application deadline:* fall

*Tenable:* annual

##### **NSERC PGS D**

*Value:* \$21,000 year

*Application deadline:* fall

*Tenable:* annual

*Terms of reference:* tenable during the third and fourth or fourth and fifth year of doctoral study.

##### **NSERC Alexander Graham Bell CGS D**

*Value:* \$35,000 per year for up to three years

*Application deadline:* fall

*Tenable:* annual

*Website:* [www.nserc.gc.ca](http://www.nserc.gc.ca). Further information is available from the Office of the Dean of Graduate Studies.

#### **NSERC Industrial Post-graduate Scholarships (IPS)**

Industrial post-graduate scholarships provide financial support for highly qualified science and engineering graduates. The support allows them to gain research experience in industry while

undertaking advanced studies in Canada. These scholarships are aimed at encouraging scholars to consider research careers in industry.

##### **IPS 1**

*Value:* \$15,000 per year for up to two years plus company contribution of \$6,000 minimum per year

*Application deadline:* may apply at any time

*Tenable:* annual, during the first three years of graduate study

##### **IPS 2**

*Value:* \$15,000 per year for up to three years plus company contribution of \$6,000 minimum per year

*Application deadline:* may apply at any time

*Tenable:* annual; must be held during the first four years of doctoral studies

*Website:* [www.nserc.gc.ca](http://www.nserc.gc.ca). Further information is available from the Office of the Dean of Graduate Studies.

#### **NSERC Northern Research Internships**

*Value:* \$10,000

*Tenable:* summer term

*Application deadline:* anytime

*Terms of reference:*

For senior undergraduate or graduate students or post-doctoral fellows pursuing research in the Canadian North, in natural sciences departments or in engineering. Must be a Canadian citizen or permanent resident. Contact the Office of the Dean of Graduate Studies for further information.

#### **NSERC Undergraduate Student Research Awards (USRAs)**

*Value:* \$5,625

*Application deadline:* January

*Tenable:* summer, fall or spring

*Terms of reference:*

To encourage undergraduate students to pursue a research career or diversify their research experience in the natural sciences and engineering, with the intent of potentially undertaking graduate studies upon completion of their bachelor's degree. USRA recipients are employed as research assistants working on a specific research project with a faculty supervisor for a 16-week period during the summer, fall or spring term.

#### **Northern Scientific Training Program (NSTP)**

*Value:* varies

*Application deadline:* mid-November latest

*Tenable:* summer term

*Terms of reference:* This program is administered by Simon Fraser University on behalf of the Department of Indian and Northern Affairs to assist with funding of graduate student research. NSTP will help pay for transportation and living costs while conducting practical field experiences in northern Canada.

*Eligibility:* Students must be Canadian citizens or permanent residents. Further information is available from the Office of the Dean of Graduate Studies, MBC 1100

#### **Pacific Century Graduate Scholarships (PCGS)**

*Value:* \$10,000

*Nomination deadline:* February 15

*Tenable:* fall, spring and summer

*Terms of reference:* The PCGS program is funded by the provincial government to attract top entering graduate students to one of the four BC universities. Award recipients will receive either a major Simon Fraser University Entrance Scholarship valued at \$19,000 in year one of their program and a PCGS valued at \$10,000 as well as other departmental funding in year two of their program. Other recipients will receive a PCGS plus a Special Graduate Entrance Scholarship for a total of \$19,000 in year one of their program.

### Pacific Institute for Climate Solutions Fellowships (PICS)

Value: \$10,000

Application deadline: fall

Tenable: fall, spring, summer

Terms of reference: One year fellowships offered by the Pacific Institute for Climate Solutions in collaboration with BC's four research intensive universities and the province to build capacity in priority areas of climate research. Awards are valued at \$10,000 with an additional \$10,000 to be matched through an academic supervisor's research grant or other departmental funding sources. Research topics must be in one of the following four areas: understanding future climate; understanding the implications; developing solutions and assessing options; and communicating the issues. Priority will be given to entering students and those who are in the early stages of their graduate program at Simon Fraser University.

### Pacific Leaders Graduate Student Fellowships (PLGSF)

Value: \$20,000 per year

Application deadline: October

Tenable: summer, fall and spring

Terms of reference: Intended for students in the final full-time year or the last two full time years of either a master's or doctoral degree producing research to address key issues facing British Columbia. Areas of focus will be related to the provincial government's priorities in areas of current and future skills shortages and/or immediate research needs. PLGSF recipients agree to work for the BC Public Service following graduation for at least one year for each year of fellowship support.

### Michael Smith Foundation for Health Research Trainee Award Programs

(1) Master's/Doctoral Studentship Award

Value: \$20,000 per year stipend

Research/travel allowance: \$2,500 per year

Application deadline: November 1 (approximate in last few years)

Tenable: annual, two years maximum for a master's award, non-renewable; five years maximum for a doctoral award, or combination of master's and doctoral awards.

Terms of reference: Open to highly qualified individuals at the master's, and doctoral levels who wish to pursue a career in an area of health research in BC and whose research fits one of the following: biomedical research, clinical research, research respecting health systems and health services, research on societal, cultural and environmental influences on health and the health of populations. Candidates must be either a Canadian citizen or permanent resident of Canada at the time the award is taken up.

(2) Postdoctoral Fellowship Award

Value: \$35,000 to \$45,000

Research/travel allowance: \$4,000 per year

Application deadline: varies

Tenable: Initially for two years, with the possibility of an additional one year extension.

Terms of reference: To enable highly qualified post graduates to prepare for careers in health research as independent investigators in biomedical research, clinical research, research respecting health systems and health services, research on societal, cultural and environmental influences on health and the health of populations. Information and application forms are available through the Office of the Dean of Graduate Studies, MBC 1100. Applications, guidelines and information regarding eligibility are also available for download from the MSFHR website locate at [www.msfr.org](http://www.msfr.org)

### Social Sciences and Humanities Research Council Awards

Alexander Graham Bell Canada Graduate

Scholarships (CGS) Master's Program

Value: \$17,500 per year

Application deadline: November 5

Tenable: One year, non-renewable

Terms of reference: Applicants must be applying for support to pursue a first graduate degree and not have completed, by the time of taking up the award, more than 12 months of full-time study.

Alexander Graham Bell DCGS Doctoral Scholarships

Value: \$35,000 per year for up to three years

Application deadline: November 5

Tenable: Annual

Terms of reference: SSHRC offers doctoral support in the humanities and social sciences. Applicants must be Canadian citizens or permanent residents, living in Canada. Applicants must have completed a master's degree or at least one year of doctoral study, and will be pursuing full time studies leading to a first PhD or its equivalent. The deadline for applications to the appropriate Simon Fraser University department is approximately October 15. Website: [www.sshrc.ca](http://www.sshrc.ca). Further information is available from the Office of the Dean of Graduate Studies.

SSHRC Doctoral Fellowships

Value: \$20,000 per year

### Trudeau Foundation Doctoral Scholarship

Value: \$50,000

Application deadline: December 1

Tenable: annual award, up to three years of funding

Terms of reference:

Fifteen awards are awarded nationally each year to outstanding students in the social sciences and humanities who are enrolled in their first or second year of a PhD program, or entering a doctoral program. Research must be in one of four themes of the foundation. Application through Simon Fraser University. See [www.trudeaufoundation.ca](http://www.trudeaufoundation.ca) for full information.

### Vanier Canada Graduate Scholarships (CGS)

Value: \$50,000 per year (up to three years)

Tenable: annual

Nomination deadline: fall

Terms of reference: To attract and retain world-class doctoral students who demonstrate leadership skills and a high standard of scholarly achievement in doctoral studies at Canadian universities. Canada's three federal granting agencies (Canadian Institutes of Health Research [CIHR], Natural Sciences and Engineering Research Council [NSERC] and Social Sciences and Humanities Research Council [SSHRC]) will provide a nomination quota to each Canadian university. Canadian, permanent residents and international students are eligible for consideration. Candidates must be nominated for a Vanier CGS via a Canadian university with a Vanier quota and be seeking support to pursue their first PhD. Visit [www.vanier.gc.ca](http://www.vanier.gc.ca) for further information.

### Worksafe Research Training Awards

Value: \$20,000, with a \$2,500 research and travel allowance

Application deadline: March 12

Tenable: annual award

Terms of reference:

For highly qualified graduate students at the master's and doctoral level who are undertaking full-time research on the prevention and/or treatment of occupational illness, injury and disability. Enquiries to: [resquery@worksafebc.com](mailto:resquery@worksafebc.com) and [www.worksafebc.com](http://www.worksafebc.com)

### Externally Administered Awards

The following awards are not administered by Simon Fraser University. The information is intended for general reference only; it may be subject to change. The student is responsible for enquiring and applying through the appropriate agency as indicated in the description.

### Awards Administered by the International Council for Canadian Studies

Value: varies

Application deadline: October

Terms of reference: The ICCS administers a number of national and international programs on behalf of Canadian and foreign donors. A brief description of some of the awards is given below. A comprehensive list of awards, including those offered for study abroad, is available from International Council for Canadian Studies, 800 – 325 Dalhousie Street, Ottawa, Ontario, K1N 7G2. Deadlines for application are normally in October of each year. Website: [www.iccs-ciec.ca](http://www.iccs-ciec.ca).

### BC Innovation Council (BCIC) Scholarships

BCIC is a crown agency of the Province of British Columbia that creates the conditions for top-tier innovation and commercialization within BC in partnership with government, industry and academia. The council offers the following scholarship programs:

B.C. Industrial Innovation Scholarships (BC-IIS)

Value: \$20,000 annually for master's students;

\$25,000 annually for PhD students

Application deadline: varies

Tenable: fall, spring and summer

Terms of reference: For graduate students in science, engineering or health research to partner with an MBA graduate student to collaborate in technology development and its successful commercialization.

B.C. Industrial Innovation Scholarships in Intelligent Systems (BC-IIS in Intelligent Systems)

Value: \$20,000 annually for master's students;

\$25,000 annually for PhD students

Application deadline: summer

Tenable: fall, spring and summer

Terms of reference: Jointly supported scholarships provided by the BC Innovation Council and Precarn Incorporated, for full-time engineering graduate students undertaking research projects with an intelligent systems component. Recipients will partner with an MBA student at any BC university to receive exposure to the technology commercialization process including business planning, technology integration, product development and market strategy. Precarn Inc., based in Ottawa, is an independent not-for-profit company that supports the pre-commercial development of leading-edge technologies.

British Columbia MBA Access to Commercialization Scholarship (BC-ACS)

Value: \$15,000 for the period

Application deadline: summer

Tenable: during the span of the student's program

Terms of reference: Scholarships for MBA students to participate in a real world business planning process that involves connecting with the investor community and to collaborate with a graduate student in the natural sciences, engineering and health sciences. Awards are intended to encourage top business students to pursue their MBA degree in BC and ultimately seek careers in technology commercialization in the province.

Canadian Institutes of Health Research (CIHR) Sir Frederick Banting and Dr. Charles Best, Canada Graduate Scholarships – Doctoral (CGS-D)

Value: varies

Application deadline: varies

Tenable: annual

*Terms of reference:* go to [www.CIHR-IRSC.gc.ca/el/193.html](http://www.CIHR-IRSC.gc.ca/el/193.html) and search their funding opportunities database for doctoral research awards.

### Commonwealth Scholarship Plan

*Value:* varies

*Application deadline:* October

*Tenable:* two years

*Terms of reference:* The Commonwealth Scholarship and Fellowship Plan offers awards to Canadian graduate students to study in Commonwealth countries to pursue advanced degrees. They are normally tenable for two years in any of the following countries: Malta, India, Jamaica, New Zealand, Nigeria, and the United Kingdom.

*Website:* [www.scholarships.gc.ca/csp](http://www.scholarships.gc.ca/csp)

### International Development Research Centre

*Value:* up to \$20,000 per award. For full information about these awards, visit [www.idrc.ca](http://www.idrc.ca).

*Application deadline:* unknown

*Terms of reference:* IDRC offers a number of awards to graduate students in Canadian universities to facilitate their involvement in Third World issues.

*Eligibility:* Canadian citizens or landed immigrants who have completed course work at graduate level and who have an affiliation with an institution in a developing country.

### OMAE Calgary Chapter (ASME) Graduate Scholarship

*Value:* \$2,500

*Terms of reference:* Annual scholarship, ranging from \$2,000 to \$4,000 from the American Society for Offshore Mechanics & Arctic Engineering (ASME). For graduate students at Simon Fraser University, University of British Columbia, University of Victoria, University of Saskatchewan, University of Regina and University of Manitoba, with preference to applicants doing thesis work that applies to offshore mechanics, arctic or pipeline engineering.

### Queen Elizabeth II British Columbia Centennial Scholarship

*Value:* \$30,000

*Application deadline:* January 31

*Tenable:* Any term

*Terms of reference:* The purpose of this scholarship is to enable selected British Columbians who have graduated from a public university in BC to complete further studies at approved universities in the British Commonwealth, except Canada. *Eligibility:* a graduate of the University of British Columbia, the University of Victoria, Simon Fraser University or the University of Northern British Columbia a) who has attended any British Columbia public university for a minimum of two years; b) whose ordinary domicile, home or residence is in BC; c) who is a Canadian citizen. *Deadline:* January 31. Applications are available on line.

### Rhodes Scholarships

*Value:* varies (in Euros)

*Application deadline:* September 30

*Terms of reference:* The Rhodes Trustees offer annually in the Province of British Columbia one Rhodes Scholarship, which is tenable at Oxford University for two years, and renewable for a third year. *Eligibility:* Canadian citizens or British subjects who have been ordinarily resident in Canada for at least five years by October 1st in the year of application; from 19 to 25 years of age on October 1st in the year of election, with at least three years of university study completed at time of tenure. Distinction of character and intellect are given most consideration in selection. Further information is available from the Financial Aid and Awards office and the Office of the Dean of Graduate Studies.

### Soroptimist Foundation of Canada

*Value:* \$7,500

*Application deadline:* January 31

*Tenable:* summer term

*Terms of reference:* These are grants to assist female students with university studies which will qualify them for careers serving other women by improving the quality of their lives.

*Eligibility:* enrolled in a graduate program. Must be Canadian citizens or permanent residents. [www.soroptimistfoundation.ca](http://www.soroptimistfoundation.ca)

### J.H. Stewart Reid Memorial Fellowship

*Value:* \$5,000

*Application deadline:* April 30

*Terms of reference:* The J.H. Stewart Reid Memorial fellowship is open to doctoral students in any field at any Canadian university. *Eligibility:* a) Canadian citizen or landed immigrant; b) completion of at least one full academic year of graduate work by June 1; c) a first class academic record. Application forms are available on the web: [stewartreid.caut.ca](http://stewartreid.caut.ca)

### Carl H. Westcott Memorial Fellowship

*Value:* \$10,000

*Application deadline:* December 1

*Terms of reference:* One scholarship is awarded annually to a student whose research work is being carried out at TRIUMF or on TRIUMF related projects. For further information visit [www.triumf.info/public/students/awards/westcott.php](http://www.triumf.info/public/students/awards/westcott.php).

## Bursaries and Loans

### Bursaries Administered by the University

The following regulations govern all university, private and endowed bursaries over which the University has jurisdiction.

#### Regulations

- Bursaries are a supplemental source of funding for students in high financial need. Students are expected to find their primary funding through other sources such as government student loan or grant programs, part time work, savings, family, etc.
- Students must have a demonstrated financial need.
- Both undergraduate and graduate students, domestic (Canadian) and international, are eligible unless otherwise indicated.
- Undergraduate students must have a minimum CGPA of 2.00 to be eligible for bursaries. Graduate students in eligible master's or doctoral programs must have a minimum CGPA of 3.00 to be eligible for bursaries.
- Graduate students must be enrolled for residence credit in an approved full time program for the term of application. Students who do not enrol or subsequently change to on-leave or part time status may have their awards cancelled.
- Domestic (Canadian) students must be approved for government student assistance from their home jurisdiction to be eligible. In exceptional circumstances, students may appeal for exemption.
- The student must apply using the Simon Fraser University online bursary/work-study application form via the student information system (<http://sis.sfu.ca>). It is the student's responsibility to meet applicable deadlines and supply all required documentation. Incomplete applications may be rejected.
- Unless otherwise stated, bursaries are tenable only at Simon Fraser University.
- Funds will be credited to the successful student's account with the University. Outstanding debts to the University will be deducted from the bursary funds before a cheque for the credit balance is issued.
- Bursaries are tenable only for the term indicated on the notice and may not be deferred. Students who do not enrol in the term for which the bursary is granted forfeit the award. To be considered for bursaries in future terms of enrolment, students must reapply.

## Bursaries for All Students

### Alumni Scholarship and Bursary Endowment Fund

*Program code:* GEBO-584

*Value:* \$500

*Awarded:* fall, spring, summer

*Terms of reference:* To undergraduate and graduate students. The awards are based on financial need and satisfactory academic standing.

### Laura (Pat) Band and Richard W. Band Bursary for First Nations Students

*Program code:* GEBO-540

*Value:* \$400

*Awarded:* fall, spring, summer

*Terms of reference:* The bursary is granted in any term based on financial need and community service to a student who is a member of the Squamish, Fort Langley, or Cheam First Nations and who have demonstrated volunteer involvement in service to the University or the community at large. The bursary may be granted to graduate or undergraduate students in all disciplines and fields of study. The successful student will have completed a minimum of 30 credits and will have achieved a minimum cumulative GPA of 2.33. The application should include a discussion of the student's volunteer involvement in community activities and confirmation of the student's status in the Squamish, Fort Langley or Cheam First Nations.

### Birks Family Foundation Bursary

*Program code:* GPBO-551

*Value:* \$500

*Awarded:* fall, spring, summer

*Terms of reference:* The Birks Family Foundation has established a plan of annual contributions to the student aid fund of recognized Canadian universities and colleges for the creation of these bursaries. The bursaries are awarded by the foundation on the recommendation of the university scholarship committee, are not restricted by faculty or year, and may be renewed. The number and amount of such awards may vary annually depending upon the funds available from the Foundation.

### The Honourable Angelo E. Branca and Mrs. Branca Bursary

*Program code:* GEBO-586

*Value:* \$800

*Awarded:* fall

*Terms of reference:* To students entering from secondary school. Applicants must demonstrate financial need and have satisfactory academic standing. Other bursaries valued approximately at one term's tuition are available to students from any faculty, who have a minimum of 60 units at Simon Fraser University, have maintained satisfactory standing, and are in financial need. In honor of the 50th wedding anniversary of the Honorable Angelo E. Branca and Mrs. Branca, and on the occasion of his retirement from the bench, this bursary endowment fund has been established by the following donors, Confratellanza Italo-Canadese and friends Mr. J. Diamond, Mr. J. Segal, Mr. Ben Wosk.

### Burrard Charitable Foundation Bursary

*Program code:* GPBO-554

*Value:* \$750

*Awarded:* fall

*Terms of reference:* Available in the Fall semester to a disabled student who has satisfactory academic standing and is in financial need.

### Chapman Foundation Graduate and Undergraduate Bursaries

*Program code:* GEBO-744

*Value:* \$250

*Awarded:* spring

*Terms of reference:* The Chapman Foundation Graduate and Undergraduate Bursaries will be



awarded to students in any faculty in good academic standing on the basis of demonstrated financial need.

#### **Father Della-Torre Bursary**

Program code: GEBO-592

Value: \$650

Awarded: fall

Terms of reference: Bursaries valued approximately at one term's tuition are available to students entering from secondary school. Applicants must demonstrate financial need and have satisfactory academic standing. Other bursaries valued approximately at one term's tuition are available to students in any faculty, who have a minimum of 60 units at Simon Fraser University, have maintained satisfactory academic standing and are in financial need.

#### **Alex W. Fisher Bursary**

Program code: GEBO-596

Value: \$450

Awarded: spring

Terms of reference: To a hard-working and deserving male student in need of financial assistance. Donated by Alex W. Fisher.

#### **Lois M. Fisher Bursary**

Program code: GEBO-597

Value: \$450

Awarded: spring

Terms of reference: To a hard-working and deserving female student in need of financial assistance. Donated by Mr. Alex W. Fisher.

#### **Graduate Emergency Bursaries**

Program code: GUBO-401

Value: \$100

Awarded: fall, spring, summer

Terms of reference: Bursaries are available to graduate students who have critical financial need.

#### **Hamber Foundation Bursary**

Program code: GPBO-559

Value: \$1,000

Awarded: fall

Terms of reference: To women students with satisfactory academic standing and need for financial assistance.

#### **Blayne and Sharon Johnson Bursary**

Program code: GEBO-523

Value: \$1100

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **Charles Chan Kent Golden Wedding Bursaries**

Program code: GPBO-563

Value: \$500

Awarded: fall

Terms of reference: To a student who is proceeding to a degree in any field, has successfully completed at least one year at Simon Fraser University, and needs financial assistance. Preferably the bursary will be made to a student of Chinese descent.

#### **Theodore and Abraham Maiman Graduate Bursary**

Program code: GEBO-752

Value: \$1,000

Awarded: fall, spring, summer

Terms of reference: Awarded annually on the basis of demonstrated financial need and good academic standing to any graduate students pursuing laser research.

#### **Dr. Carol Matusicky Family Studies Bursary**

Program code: GEBO-708

Value: \$500

Awarded: spring

Terms of reference: The bursary is given on the basis of demonstrated financial need and satisfactory academic performance. Preference will be given to a student in the certificate in family studies program or, failing that, to a student in any faculty whose course

work will prepare them to work with children, youth and families after university.

#### **Jo-Ann Mychaluk Bursary**

Program code: GEBO-602

Value: \$750

Awarded: fall

Terms of reference: To students with satisfactory academic standing. These bursaries are available to students who are, or have been, residents of the Chilcotin or Cariboo regions of BC. This fund has been established in memory of Jo-Ann Mychaluk who worked in the Centre for Distance Education.

#### **Madeleine A. Nelson Bursary**

Program code: GEBO-735

Value: \$750

Awarded: spring

Terms of reference: Granted annually to a graduate or undergraduate student who has demonstrated financial need and satisfactory academic performance. Preference will be given to mature female students beginning or returning to university.

#### **Nitikman/Chan Bursary**

Program code: GEBO-737

Value: \$1,000

Awarded: fall, spring, summer

Terms of reference: The bursary will substantially pay tuition and fees for two terms and will be disbursed over two terms. Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in any faculty or discipline. The recipient will be a single parent with preference given to entering students.

#### **Jean Pudney Bursaries**

Program code: GEBO-750

Value: \$500

Awarded: fall

Terms of reference: To graduate or undergraduate students in good academic standing on the basis of demonstrated financial need.

#### **Office of the Registrar Bursary**

Program code: GEBO-665

Value: \$500

Awarded: fall

Terms of reference: The Office of the Registrar Bursary provides one or more annual bursaries from a portion of the earned interest on the endowment. The award(s) will be given in the fall semester to a disabled graduate or undergraduate student in any faculty. The bursaries will be granted to disabled students holding satisfactory academic records and experiencing financial need in the continuing pursuit of studies.

#### **Mrs. Rosalie Segal Endowment Fund for Students With Special Needs**

Program code: GEBO-604

Value: \$500

Awarded: fall, spring, summer

Terms of reference: This fund has been established to provide bursaries to physically challenged students. Up to three bursaries will be awarded on the basis of financial need. Adjudication will occur in consultation with the physically challenged students' co-ordinator.

#### **Simon Fraser University Daycare Bursaries**

Program code: GUBO-700

Value: \$100

Awarded: fall, spring, summer

Terms of reference: Applications for daycare bursaries are available at the Daycare Centre. Eligible students may qualify for a bursary provided that financial need can be demonstrated by a completed Canada Student Loan assessment or an open bursary assessment. Daycare bursaries are available to both graduate and undergraduate students.

#### **Simon Fraser University Disabled Graduate Student Award**

Program code: GUBO-850

Value: \$2,000

Awarded: fall, spring

Terms of reference: An award of \$2,000 per term for one year may be made by the University to a disabled graduate student. The applicant must be a full-time enrolled graduate student in good standing whose disability substantially increases the cost of study and who can demonstrate financial need.

#### **SFU International Students' Bursary Fund**

Program code: GUBO-600

Value: \$500

Awarded: fall, spring, summer

Terms of reference: This fund has been established to assist undergraduate visa students who have critical financial need. Students applying for this bursary must be enrolled in a minimum of nine units and have satisfactory academic standing.

#### **Simon Fraser University Open Bursaries**

Program code: GUBO-500

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Must be enrolled in a minimum of nine units and have satisfactory academic standing.

#### **Jennifer Allen Simons Bursary**

Program code: GEBO-669

Value: \$1,000

Awarded: fall

Terms of reference: To an undergraduate or graduate woman student in any faculty. The bursary will be granted in the fall term to a student who is a single parent supporting a child, and who is in financial need and who has satisfactory academic performance. Applicants must have completed one term at Simon Fraser University as a full-time student.

#### **Harry and Dora Annie Smee Bursary**

Program code: GEBO-606

Value: \$800

Awarded: fall

Terms of reference: Up to three bursaries will be awarded to students in any faculty who have completed at least 30 units at Simon Fraser University. The awards will be based on financial need and satisfactory academic standing. Preference will be given to female students.

#### **Merle L. Smith Bursary**

Program code: GPBO-572

Value: \$525

Awarded: spring

Terms of reference: A physically challenged student in any faculty who is beyond first year studies. Initial preference will be given to wheelchair users.

#### **Squamish Nation Bursary**

Program code: GEBO-738

Value: \$500

Awarded: fall, spring, summer

Terms of reference: The bursary, based on financial need and community service, is granted to a student who is a member of the Squamish Nation. The bursary may be granted to graduate or undergraduate students in all disciplines. The successful student will have completed a minimum of 24 units and will have achieved a minimum CGPA of 2.00. The application should include a discussion of the student's involvement in Simon Fraser University or Squamish Nation community activities and confirmation of the student's status with the Squamish Nation.

#### **TSSU Member Child Care Bursary**

Program code: GUBO-550

Awarded: fall, spring, summer

Terms of reference: TSSU employees are eligible to apply to the TSSU Member Child Care Bursary for each term in which they hold an appointment and are enrolled as students at Simon Fraser University and in which they receive child care services from a paid child care provider. All applications are subject to verification. The applicant must identify him/herself as

an employee in the bargaining unit on the bursary application.

#### **University Women's Club of Vancouver Bursary**

Program code: GPBO-575

Value: \$985

Awarded: spring

Terms of reference: To a female student in any faculty enrolled in any program of study leading to a degree. The basis of the award is demonstration of financial need and satisfactory academic standing.

#### **Vancouver Foundation First Nations Bursary**

Program code: GPBO-697

Value: \$500

Awarded: fall

Terms of reference: Bursaries will be available annually in the fall term to undergraduate or graduate Aboriginal students (First Nations, status or non-status, Metis or Inuit) who permanently reside in British Columbia. Awards will be granted on the basis of demonstrated financial need and satisfactory academic performance.

#### **Western Businesswomen's Association Bursary**

Program code: GEBO-705

Value: \$800

Awarded: fall

Terms of reference: To a full or part-time student who is either entering the University for the first time or returning after an absence. Preference will be given to a mature female student. The bursary will be based on satisfactory academic performance and demonstrated financial need.

#### **Lisa and Christopher Yun "Pay It Forward" Annual Bursary**

Program code: GPBO-716

Value: \$1,000

Awarded: fall

Terms of reference: Available annually to full-time students in any faculty. Eligible students must demonstrate financial need and be in good academic standing. Preference will be given to students who are single parents with dependent(s).

#### **Bursaries for Applied Sciences Students**

##### **Olga and Richard Murray Bursary in Applied Sciences**

Program code: GEBO-725

Value: \$1,000

Awarded: fall, spring, summer

Terms of reference: Granted to graduate or undergraduate students in the Faculty of Applied Sciences on the basis of demonstrated financial need and satisfactory academic performance. To the extent feasible, preference will be given to a student, or the spouse or child of a person, who is a member of the Telecommunication Workers Union or of Van-Tel Credit Union.

#### **Bursaries for Arts and Social Sciences Students**

##### **School of Criminology Alumni Bursaries**

Program code: GEBO-530

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the School of Criminology.

##### **Charles Drugan & Rose Anne Doonan Bursary in Labour History**

Program code: GEBO-542

Value: \$250

Awarded: fall, spring, summer

Terms of reference: The bursary will be granted to a graduate or undergraduate student pursuing research

in labor history in the Faculty of Arts. Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance.

##### **Aird Dundas Flavelle Memorial Bursary**

Program code: GEBO-659

Value: \$1,200

Awarded: fall

Terms of reference: To a student who has completed at least 15 units at Simon Fraser University with a satisfactory academic standing and whose course of study is in the following areas: political science, economics and/or business administration.

##### **Keith Gilbert Loughlin Bursary in Gerontology**

Program code: GEBO-702

Value: \$700

Awarded: fall

Terms of reference: To a graduate student enrolled in the master of gerontology program, or to an undergraduate student enrolled in the gerontology program, a post baccalaureate diploma program. The bursary will be granted to a student demonstrating financial need and in satisfactory academic standing. Preference will be given to a student specializing in quality of life issues in intermediate care facilities for seniors. Applicants should submit with their application, a letter outlining specialization or area of interest in the gerontology field. A departmental nomination is to be submitted along with the application form.

##### **MATCH International Centre Bursaries in Honour of Rosemary Brown**

Program code: GPBO-607

Value: \$625

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance to full-time undergraduate or graduate students in the Department of Women's Studies.

##### **Dr. Grazia Merler Bursary in French**

Program code: GEBO-714

Value: \$500

Awarded: spring

Terms of reference: To a student in French on the basis of demonstrated financial need and satisfactory academic performance.

##### **Master in Public Policy Bursary**

Program code: GUBO-106

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Bursaries are available for full and part-time students of the master of public policy program who have demonstrated financial need. Bursaries will be awarded each term to students in good academic standing who have special circumstances requiring financial support not available from a sponsoring organization, current income or assets.

##### **Master of Urban Studies Bursary**

Program code: GUBO-108

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Bursaries are available for full-time students in the master of urban studies program who have demonstrated financial need. Bursaries will be awarded each term to students in good academic standing who have special circumstances requiring financial support that is unavailable from a sponsoring organization, current income or assets.

##### **L. R. (Bunny) Wright Memorial Bursary**

Program code: GEBO-537

Value: \$300

Awarded: fall, spring

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory

academic performance, to a student(s) of the graduate Liberal Studies Program.

#### **Bursaries for Business Administration Students**

##### **Faculty of Business Administration Alumni Bursaries**

Program code: GEBO-531

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the Faculty of Business Administration.

##### **Bursaries for Business Administration Masters Programs**

Program code: GUBO-110

Awarded: fall, spring, summer

Terms of reference: Bursaries are available for full and part-time students enrolled in a master's program in the Faculty of Business Administration who have demonstrated financial need. Bursaries will be awarded each term to students in good academic standing who have special circumstances requiring financial support that is not available from a sponsoring organization, current income or assets. Students must submit a letter outlining their special circumstances with the bursary application. Awards will be made by the Senate Undergraduate Awards Adjudication Committee in consultation with the student's department.

##### **Executive Master of Business Administration Bursary**

Program code: GUBO-101

Value: \$250

Awarded: fall, spring, summer

Terms of reference: Bursaries are available for students of the executive master of business administration program and who have demonstrated financial need. Bursaries will be awarded each term to students in good academic standing who have special circumstances requiring financial support not available from a sponsoring organization, current income or assets. Students must submit a letter outlining their special circumstances with the bursary application. Awards will be made by the Senate Undergraduate Awards Adjudication Committee in consultation with the student's department.

##### **Aird Dundas Flavelle Memorial Bursary**

Program code: GEBO-659

Value: \$1,200

Awarded: fall

Terms of reference: To a student who has completed at least 15 units at Simon Fraser University with a satisfactory academic standing and whose course of study is in the following areas: political science, economics and/or business administration.

##### **Global Asset and Wealth Management MBA Bursary**

Program code: GPBO-699

Value: \$250

Awarded: fall, spring, summer

Terms of reference: The bursary was established in 2004 by the business council of the global asset and wealth management MBA program. The bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the global asset and wealth management master of business administration program.

##### **Graduate Global Asset Wealth Management Bursary**

Program code: GUBO-104

Value: variable

Awarded: fall, spring, summer

Terms of reference: Bursaries are available for full and part-time students of the global asset and wealth management master of business administration and

who have demonstrated financial need. Bursaries will be awarded each term to students in good academic standing who have special circumstances requiring financial support not available from a sponsoring organization, current income or assets. Students must submit a letter outlining their special circumstances with the bursary application. Awards will be made by the Senate Undergraduate Awards Adjudication Committee in consultation with the student's department.

#### **Graduate Diploma in Business Administration Bursary**

Program code: GUBO-103

Value: \$250

Awarded: fall, spring, summer

Terms of reference: Bursaries are available for students within the graduate diploma in business administration and who have demonstrated financial need. Bursaries will be awarded each term to students in good academic standing who have special circumstances requiring financial support not available from a sponsoring organization, current income or assets. Students must submit a letter outlining their special circumstances with the bursary application. Awards will be made by the Senate Undergraduate Awards Adjudication Committee in consultation with the student's department.

#### **Management of Technology Master of Business Administration Bursary**

Program code: GUBO-102

Value: \$250

Awarded: fall, spring, summer

Terms of reference: Bursaries are available for students of the management of technology master of business administration program and who have demonstrated financial need. Bursaries will be awarded each term to students in good academic standing who have special circumstances requiring financial support not available from a sponsoring organization, current income or assets. Students must submit a letter outlining their special circumstances with the bursary application. Awards will be made by the Senate Undergraduate Awards Adjudication Committee in consultation with the student's department.

#### **J. Rose Memorial Bursary**

Program code: GUBO-400

Value: \$1,000

Awarded: summer

Terms of reference: To an undergraduate or graduate business administration student who is in full time studies. The bursary will be granted on the basis of financial need and satisfactory academic performance. This bursary is provided by the Vancouver Foundation. A departmental recommendation is required.

#### **Specialist Masters of Business Administration Bursary**

Program code: GUBO-100

Value: \$250

Awarded: fall, spring, summer

Terms of reference: Bursaries are available for students of the specialist master of business administration program and who have demonstrated financial need. Bursaries will be awarded each term to students in good academic standing who have special circumstances requiring financial support not available from a sponsoring organization, current income or assets. Students must submit a letter outlining their special circumstances with the bursary application. Awards will be made by the Senate Undergraduate Awards Adjudication Committee in consultation with the student's department.

#### **Bursaries for Communication, Art and Technology Students**

##### **Adaline May Clark Bursary**

Program code: GEBO-589

Value: \$400

Awarded: fall

Terms of reference: The late Mrs. Clark has provided for the endowment of funds for bursaries to enable students to attend, or continue to attend university. Students must be enrolled in the School for the Contemporary Arts, and must demonstrate financial need and a high level of achievement in the arts.

##### **School for the Contemporary Arts Alumni Bursaries**

Program code: GEBO-529

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the School for the Contemporary Arts.

##### **Ancie and Arthur Fouks Bursary in Publishing Studies**

Program code: GEBO-526

Value: \$1,000

Awarded: fall

Terms of reference: One or more bursaries will be awarded annually in the fall term to a student enrolled in a degree program in publishing studies. Awards may also be given to graduate students undertaking a master's program in publishing studies. Student must have a minimum of 85 units. The successful applicant should have financial need, a satisfactory academic standing and a demonstrable intent to pursue a career in the publishing industry. Applicants must submit to the publishing studies program committee a resume, including education and work history, and at least one short sample of professional, academic or business writing or portfolio piece to be considered for the award.

##### **Master in Publishing Bursary**

Program code: GUBO-107

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Bursaries are available for full and part-time students of the master of publishing program who have demonstrated financial need. Bursaries will be awarded each term to students in good academic standing who have special circumstances requiring financial support not available from a sponsoring organization, current income or assets.

#### **Bursaries for Education Students**

##### **Jean G.K. Bailey Graduate Bursary in Education**

Program code: GEBO-755

Value: \$2,000

Awarded: spring

Terms of reference: To a student enrolled in any graduate program in the Faculty of Education at Simon Fraser University.

##### **University Women's Club of Vancouver/Jean Beaty Memorial Bursary in Education**

Program code: GEBO-519

Value: \$700

Awarded: summer

Terms of reference: Granted on the basis of demonstrated financial need and satisfactory academic performance to a mature student in the Faculty of Education.

##### **Faculty of Education Alumni Bursaries**

Program code: GEBO-533

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the Faculty of Education.

##### **Master In Education (Off Campus) & Education Doctorate Program Bursary**

Program code: GUBO-105

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Bursaries are available for full and part-time students of the master of education (off campus) and education doctorate program who have demonstrated financial need. Bursaries will be awarded each term to students in good academic standing who have special circumstances requiring support not available from a sponsoring organization, current income or assets.

##### **Hildegard and Cornelius Renner Graduate Bursary in Education**

Program code: GEBO-517

Value: \$800

Awarded: fall, spring, summer

Terms of reference: Awarded annually in any term on the basis of demonstrated financial need and satisfactory academic performance to mature graduate students in the Faculty of Education. Preference will be given to mature graduate students with an interest in adult education. Application should include a discussion of the student applicant's interest in adult education.

#### **Bursaries for Environment Students**

##### **Stuart Olson Construction Inc. Annual Graduate Bursary in Resource and Environmental Management**

Program code: GPBO-712

Value: \$2,000

Awarded: fall

Terms of reference: To a full-time student pursuing a master's or PhD in resource and environmental management on the basis of demonstrated financial need.

#### **Bursaries for Health Sciences Students**

##### **TD Bank Financial Group Graduate Bursary Endowment for Health Sciences**

Program code: GEBO-746

Value: \$500

Awarded: fall, spring, summer

Terms of reference: Bursaries will be granted to Canadian graduate students in the Faculty of Health Sciences. The bursary is granted on the basis of demonstrated financial need and satisfactory academic progress.

##### **Vancouver Foundation Health Science Bursaries**

Program code: GPBO-578

Value: \$1,000

Awarded: fall, spring

Terms of reference: The bursary assistance program is limited to full-time students studying in health sciences. The funds are directed to students who have completed at least one year of post-secondary education and can demonstrate financial need. Areas of study include any of the following: pre-med program, kinesiology, biomedical engineering, and gerontology.

#### **Bursaries for Science Students**

##### **Curzon-Digman Bursary**

Program code: GEBO-594

Value: \$750

Awarded: fall, spring, summer

Terms of reference: Available to graduate students in physics or for majors or honors undergraduate students in physics, mathematical physics, chemical physics, biophysics or other joint programs with

physics. These bursaries are subject to demonstrated financial need and good academic standing. Nominations will be made by the chair of the physics department in consultation with Financial Aid and Awards.

#### **School of Kinesiology Alumni Bursaries**

Program code: GEBO-532

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the School of Kinesiology.

#### **Dr. Tom Richardson Memorial Graduate Entrance Bursary**

Program code: GEBO-726

Value: \$1400

Awarded: fall, spring

Terms of reference: To a graduate student entering kinesiology, or in the first term of kinesiology, or for a student pursuing graduate studies in other departments with a focus on biomedical engineering. The criteria for this award are: financial need; demonstrated academic excellence at the undergraduate level and, if applicable, at the graduate level; intention to enrol in the graduate program in kinesiology, or completion of the first term in a graduate program in kinesiology, or intention to pursue research in biomedical engineering as a graduate student in another department.

#### **Faculty of Science Alumni Bursaries**

Program code: GEBO-528

Value: \$500

Awarded: summer

Terms of reference: Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance to students in the Faculty of Science.

#### **Urea Formaldehyde Foam Insulation Action Association Bursary**

Program code: GEBO-607

Value: \$250

Awarded: fall, spring

Terms of reference: To students who have completed at least 60 units and who are studying in the areas of toxic chemicals or pollutants and their effects on human health and functioning. Please document eligibility. The endowment has been established by the association.

#### **Vancouver Foundation Health Science Bursaries**

Program code: GPBO-578

Value: \$1,000

Awarded: fall, spring

Terms of reference: The bursary assistance program is limited to full-time students studying in health sciences. The funds are directed to students who have completed at least one year of post-secondary education and can demonstrate financial need. Areas of study include any of the following: pre-med program, kinesiology, biomedical engineering, and gerontology.

#### **Vancouver Horticulture Society Bursary**

Program code: GEBO-590

Value: \$750

Awarded: fall, spring

Terms of reference: This award is available to students of the master of pest management program studying pest problems relating to horticulture. It is awarded to students who are in financial need and qualified in terms of character and scholarship.

## **University Administered Loans**

### **Student Emergency Loan Fund**

#### **Regulations**

The following regulations govern all loans for continuing students over which the University has jurisdiction.

- Short term emergency funds are available to students who urgently need money while awaiting receipt of other sources of funding.
- Emergency loans are not available for outstanding fees owed to the University.
- Students must have a demonstrated financial need and a secured source of repayment.
- Undergraduate students must be registered in a minimum of nine units of normal graded courses in the term of application. Challenge, audit, and credit free courses will not be considered.
- Graduate students must be registered for residence credit in an approved full-time program.
- Students must meet with a Financial Aid and Awards Advisor. It is the student's responsibility to supply all requested documentation. Incomplete applications may be rejected.
- Simon Fraser University Emergency Loans are tenable only at Simon Fraser University and only for the term indicated on the notice.

## **Work-Study Program**

The Simon Fraser University Work-Study program provides part time on-campus jobs for full time students.

#### **Regulations**

The following regulations apply to participate in the Work-Study Program.

- Students must have a demonstrated financial need.
- Undergraduate and graduate students, both domestic (Canadian) and international, are eligible to apply.
- Undergraduate students must have a minimum CGPA of 2.00.
- Graduate students in eligible master's or doctoral programs must have a minimum CGPA of 3.00.
- Undergraduate students must be enrolled in a minimum of nine units of normal graded courses in the term of application. Challenge, audit and credit-free courses will not be considered. Students who enrol in fewer than nine units or subsequently drop below nine units may have their work-study position cancelled.
- Graduate students must be enrolled for residence credit in an approved full-time program. Students who do not enrol or subsequently change to on-leave status may have their work-study position cancelled.
- Domestic (Canadian) students must be approved for government student assistance from their home jurisdiction to be eligible.
- The student must apply using the Simon Fraser University online bursary/work-study application form via the student information system (<http://sis.sfu.ca>). It is the student's responsibility to meet applicable deadlines and supply all required documentation. Incomplete applications may be rejected. Note: some BC students may be identified as eligible candidates through their StudentAid BC application and be notified of this opportunity.

## **Government Administered Programs**

### **Canadian Armed Forces Subsidization Plans**

#### **Admission Requirements**

An applicant must be a Canadian citizen; be physically fit for enrolment in the Canadian Forces; and be at least 16 years of age on the first day of January of the year the student commences first year studies at the university.

#### **How to Apply**

Individuals interested in obtaining more information or wishing to apply for any of these plans are requested to contact: Commanding Officer, Canadian Forces Recruiting Centre, 757 West Hastings Street, Vancouver, BC, V6C 1A1.

### **Government Loans**

A loan is a repayable sum of money borrowed by a student who demonstrates financial need. A grant is funding that a student is not normally required to repay.

### **Student Loan and Grant Programs**

#### **BC Residents Studying Full-Time**

StudentAid BC assists eligible students with the cost of post-secondary education through loans, grants, bursaries, scholarships and special programs. It also offers programs for students who need help to repay a student loan.

Most StudentAid BC programs are based on need, and provide financial assistance to students and their immediate families who do not have the financial resources to pay for post-secondary education and basic living expenses.

StudentAid BC administers programs on behalf of the Government of Canada including Canada student loans and Canada Student Grants. For detailed information about available opportunities, eligibility requirements and how to apply, visit the Student Aid BC website at [www.studentaidbc.ca](http://www.studentaidbc.ca).

#### **Out-of-Province Students Studying Full-Time**

Students must apply to their province of residence for provincial/territorial funding. On-line applications are available for most provinces. Check the Financial Aid and Awards website at <http://students.sfu.ca/financialaid> for links to each of the provincial/territorial ministries.

#### **New for 2009/2010**

The federal government is improving access to post-secondary education by assisting students and families to manage the cost through new and improved programs including

- a new Canada Student Grant for students from low-income or middle-income families
- more effective support for students with permanent disabilities
- a new Repayment Assistance Plan to help students who have difficulty repaying loans

There are also many other changes for married students, part-time students, and students with dependents. For detailed information, visit the CanLearn website at [www.canlearn.ca](http://www.canlearn.ca).

#### **Students Studying Part-Time**

Part-time students whose family income falls below established thresholds may be eligible for up to \$1,200 per year in grants and/or up to \$10,000 in part-time Canada Student Loan funding.

For detailed information about eligibility requirements and how to apply, visit the StudentAid BC website at [www.studentaidbc.ca](http://www.studentaidbc.ca) or the CanLearn website at [www.canlearn.ca](http://www.canlearn.ca)

### Program Exceptions to Government Student Loans and Grants

Although the majority of Simon Fraser University programs are eligible for government student loans and grants, some programs do not meet federal and provincial/territorial eligibility criteria (e.g. executive MBA, MEd off-campus, graduate diploma in business administration (GDBA), non-credit continuing studies programs).

Contact Financial Aid and Awards to determine if a program is eligible.

### International Students

Students who are not Canadian citizens or Permanent Residents, and who will require financial assistance to attend Simon Fraser University must arrange such assistance in their country of origin before arrival in Canada.

Simon Fraser University permits non-Canadian students to compete for most University administered scholarships and awards at the undergraduate or graduate level, once they have enrolled at the University, on the basis of course work undertaken at Simon Fraser University and/or community service. Bursaries are awarded on the basis of financial need, but only as supplemental funding, not as core funding needed to meet immigration requirements. Students are expected to exhaust all other sources of funding including government aid from their home country before being eligible for bursaries. See the bursary section for details.

It must be stressed that non-Canadian students should not predicate their tuition and living expense estimates upon these sources. Non-Canadian students are expected and required by federal law to have sufficient funds guaranteed for their education prior to arrival in Canada.

### United States Students

Citizens (or eligible non-citizens) of the United States attending the University may apply for funding through the US Department of Education's Federal Family Education Loan (FFEL) program. US students with permanent resident status or dual citizenship may also be eligible to apply for Canadian student loans.

For more information, visit the Financial Aid and Awards website at <http://students.sfu.ca/financialaid> or the US Department of Education website at [www.studentaid.ed.gov](http://www.studentaid.ed.gov)

### For More Information

For further information on programs offered by Financial Aid and Awards (Student Services) visit <http://students.sfu.ca/financialaid>.

# Dean of Graduate Studies Programs

1100 Maggie Benston Student Services Centre,  
778.782.6568 Tel, 778.782.3080 Fax,  
[www.sfu.ca/gradstudents/prospective/visiting.html](http://www.sfu.ca/gradstudents/prospective/visiting.html)

## Dean

W.S. Parkhouse BPE (Alta), MPE, PhD (Br Col)

## Associate Dean

G. Agnes BSc (Wat), PhD (Alta)

The dean of graduate studies is responsible for the overall administration of graduate programs through the graduate general regulations, for maintenance of student records, and for the administration of all merit-based awards. Processing of admissions is delegated to the dean by the senate graduate studies committee.

Most graduate programs are administered locally through graduate program committees in the departments, schools and faculties in which they are located. The dean of graduate studies administers special arrangements programs and graduate certificate programs.

## Individual Special Arrangements

(See "1.3.5 Admission Under Special Arrangements" on page 220.)

Individual students may apply by December 1<sup>st</sup> to the dean of graduate studies for admission to an individual special arrangements program. Applicants should request an application package from the graduate studies office at least three months prior to the deadline.

In addition to regularly scheduled courses in established graduate programs, the following courses are open to special arrangements students.

## SAR 891-3 Special Topics

To be selected by the student and supervisory committee.

## SAR 892-3 Special Topics

To be selected by the student and supervisory committee.

## SAR 893-4 Special Topics

To be selected by the student and supervisory committee.

## SAR 894-5 Special Topics

To be selected by the student and supervisory committee.

## SAR 895-3 Special Topics

To be selected by the student and the supervisory committee.

## SAR 896-6 Special Topics

To be selected by the student and the supervisory committee.

## SAR 897-5 Special Topics

To be selected by the student and the supervisory committee.

## SAR 898-6 Master's Thesis

## SAR 899-6 PhD Thesis

## Cohort Special Arrangements

(See "1.3.5.a Cohort Special Arrangements" on page 220.)

These programs are designed to meet the needs of specific groups of students pursuing a master's degree in a field that is not covered in existing programs. Programs are advertised when available.

## Digital Media Program

Simon Fraser University, University of British Columbia, Emily Carr Institute of Art and Design and the British Columbia Institute of Technology collaborate on the master of digital media degree, a full time professional graduate program offering team-based learning in close collaboration with the digital games and media industries. The program is offered at the Great Northern Way campus. For further information visit <http://www.gnwc.ca/mdm>

## Certificate Programs

(See "1.3.13 Certificate Programs" on page 221.)

Graduate certificate programs are combinations of courses completed while a student is pursuing a master's or doctoral degree program.

## Visiting Research Student

Simon Fraser University accepts visiting research students under the terms of the Canadian Graduate Student Research Mobility Agreement. For details, see the Graduate Studies website at [www.sfu.ca/dean-gradstudies](http://www.sfu.ca/dean-gradstudies). Students attending Simon Fraser University under this agreement must enrol every term for the course GRAD 800.

## GRAD 800-0 Visiting Research Student

All students who are attending Simon Fraser University under the terms of the Canadian Graduate Student Research Mobility Agreement must enrol for GRAD 800.

# Faculty of Applied Sciences

9861 Applied Sciences Building, 778.782.4724 Tel,  
778.782.5802 Fax, <http://fas.sfu.ca>

## Dean

N. Rajapakse BSc (SLanka), MEng, DEng (AIT),  
PEng

## Associate Dean

F. Popowich BSc (Alta), MSc (S Fraser), PhD (Edin)

## Graduate Degrees Offered

master of applied science  
master of engineering  
doctor of philosophy  
doctor of philosophy under special arrangements

## General Regulations

For admission requirements, enrolment, residence requirements and time limit for completion of degrees, see "Graduate General Regulations" on page 219.

## School of Computing Science

9971 Applied Science Building, 778.782.4277 Tel,  
778.782.3045 Fax, [www.cs.sfu.ca/gradpgm](http://www.cs.sfu.ca/gradpgm)

## Director

R.D. Cameron BASc, PhD (Br Col)

## Graduate Program Director

A.L. Liestman BGS (Kansas), MS, PhD (Ill)

## Faculty and Areas of Research

For a complete list of faculty, see "School of Computing Science" on page 76 and [www.cs.sfu.ca](http://www.cs.sfu.ca)

M.S. Atkins – medical image display and analysis, medical image denoising, human-computer interfaces for medical radiology workstations, eyegaze applications in medicine and sleep disorders, virtual laparoscopy training

P. Berenbrink – probabilistic methods, randomized algorithms, analysis of dynamic processes, ad hoc networks, load balancing, routing and scheduling

D. Beyer – software engineering, formal verification, analysis of large systems

B.K. Bhattacharya – computational geometry, robust geometric computation, resource allocation optimization

A. Bulatov – constraint problems, computational complexity, combinatorics, clone theory and universal algebra

F.W. Burton – functional programming, parallel computing

T.W. Calvert\* – information processing in man and machines, biomedical applications, graphics

R.D. Cameron – internet protocols, programming languages and systems, software engineering

V. Dahl – logic programming, computational linguistics, bioinformatics, deductive knowledge bases, information extraction, web-based technology

J.P. Delgrande – knowledge representation, nonmonotonic reasoning, belief revision, reasoning with preferences, logic in computer science, reasoning about action

M.S. Drew – multimedia, computer vision, computer graphics, color

A.F. Ergun – quality of service in high speed networks, combinatorial property testing, sublinear algorithms, randomized algorithms

M. Ester – database systems, data mining, text mining, bioinformatics

A. Fedorova – operating systems, multiprocessors, transactional memory

B.V. Funt – color imaging, computer vision

U. Glässer – software systems engineering: mathematical foundations, requirements specification and validation, formal semantics, system design languages, concurrent and reactive systems

Q. Gu – network communications, parallel/distributed computing, algorithms and computation, machine learning, computational biology

A. Gupta – constructive combinatorics, parallel complexity theory, bioinformatics

R.F. Hadley – computational approaches to cognitive science, connectionist models of mental processes, cognitive architecture

L.J. Hafer – constrained optimization, mixed-integer linear programming, scheduling

G. Hamarneh – medical image analysis (computational/artificial intelligence, computer vision and image processing in medical imaging); geometry, physics and statistics based shape modeling, web-based medical image computing

R. Harrop\* – medical applications, automata theory, logic

W.S. Haven\* – artificial intelligence, constraint programming, intelligent systems

M. Hefeeda – computer networks and distributed systems, multimedia communications, peer-to-peer systems

P. Hell – computational combinatorics, algorithmic graph theory

V. Kabanets – computational complexity, randomness in computation, pseudorandomness and derandomization

T. Kameda\* – distributed computing, computational geometry, polygon search problems, video-on-demand

A. Kirkpatrick – human-computer interaction

R. Krishnamurti – approximation algorithms, combinatorial optimization

Z.N. Li – computer vision, multimedia, pattern recognition, image processing, artificial intelligence

A.L. Liestman – analysis of algorithms, graph theory, network communications

J.C. Liu – internet architecture and protocols, multimedia (video) communications, wireless networks, mobile ad hoc networks, overlay networks and peer-to-peer communications

W.S. Luk – database systems, distributed processing

D. Mitchell – constraint satisfaction and satisfiability testing, computational logic, propositional proof complexity

T. Möller – computer graphics, scientific visualization, signal processing, approximation theory

G. Mori – computer vision, object recognition, pose estimation, activity recognition, machine learning

J. Pei – data mining and knowledge discovery, online analytical analysis and data warehousing, database systems, bioinformatics and biometrics

J.G. Peters – networks and communication, mathematical modeling, graph theory

F. Popowich – artificial intelligence, computational linguistics, natural language

understanding/processing

S.C. Sahinalp – algorithms: pattern matching, sequence embeddings, data structures;

computational genomics: genome analysis, comparative genomics, functional evolution of the human genome

A. Sarkar – artificial intelligence, statistical natural language processing, computational linguistics, machine learning, probabilistic grammars and formal language theory

O. Schulte – computational logic, computation decision theory and game theory, machine learning

T.C. Shermer – computer graphics, graph theory, computational geometry

T. Smyth – physics-based sound synthesis and digital audio signal processing for music applications

G. Tardos – combinatorics, discrete and computational geometry, complexity theory

E. Ternovska – computational logic, complexity of reasoning, formal verification, semantics of logic programming

R.T. Vaughan – autonomous systems, robotics, artificial intelligence, adaptive and distributed systems

K. Wang – database, data mining, data mining in bioinformatics

J.J. Weinkam\* – computational epidemiology, programming languages

K. Wiese – bioinformatics, evolutionary computation and biocomputing, intelligent systems and optimization

H. Zhang – 3D computer graphics, digital geometry processing, geometric mode

## Associate Members

For areas of research, refer to the department listed.

J. Borwein, Department of Mathematics

P.B. Borwein, Department of Mathematics

J.C. Dill, School of Engineering Science

M.B. Monagan, Department of Mathematics

F.J. Pelletier, Cognitive Science Program

R.D. Russell, Department of Mathematics

L. Trajkovic, School of Engineering Science

M.R. Trummer, Department of Mathematics

\*emeritus

## Research Facilities

The school operates several interconnected local area networks in co-operation with other Faculty of Applied Sciences departments. These networks are connected to Simon Fraser University LAN, the campus-wide network, for access to the Internet.

Facilities include over 300 networked workstations, file servers, CPU servers, and other specialized systems. The workstations are mostly SUN UltraSparc and PC, with some Silicon Graphics and Macintosh workstations. Additionally, the school has comprehensive resources to facilitate VLSI design, simulation, fabrication and testing.

Other computing resources are provided by Academic Computing Services including six large SGI 4D multi-processor systems, four Sun SPARC-II computers, an IBM RS6000, and an Auspex file server. These systems and a range of software and services are available to the campus community.

## Degrees Offered

The school offers programs leading to the MSc and PhD. It provides graduate studies in theoretical computing science; artificial intelligence; database systems; computer graphics and multimedia computing; hardware design; distributed computing; programming languages and systems; computer vision and medical imaging.

## Admission Requirements

To qualify for MSc program admission, a student must satisfy the University admission requirements stated in section 1.3 of the *Graduate General Regulations* and must have a bachelor's degree or the equivalent in computing science or a related field.

To qualify for PhD program admission, a student must satisfy the University admission requirements stated in *Graduate General Regulations* 1.3 (page 219) and

- have a master's degree or the equivalent in computing science or a related field or
- have a bachelor's degree or the equivalent in computing science or a related field, with a cumulative grade point average of 3.5 (on a scale of 0.0-4.0) or the equivalent.

At its discretion, the school's graduate admission committee may offer either MSc or PhD admission to students applying to the PhD program without a master's degree or equivalent in computing science or a related field. Students enrolled in the MSc program may apply to transfer to the PhD program after two terms in the MSc program; the school's evaluation procedure for such applications is the same as that used for outside applicants.

### Breadth and Course Requirements

For purposes of defining the MSc and PhD breadth requirements, courses are grouped into the five major areas shown in Table 1. Courses not related to the breadth requirements are shown in Table 2. Any courses completed outside the School of Computing Science must be approved by the student's senior supervisor and the director of the graduate program.

Only two special topics courses (two of CMPT 829, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889) may be used toward satisfaction of breadth requirements, except with permission of the graduate program breadth committee.

The courses used to satisfy the breadth requirements must include either CMPT 705 or 710, unless the student already has credit for one of these courses (or equivalent) from a previous degree as determined by the graduate program breadth committee.

**Table 1**

#### Area I – Algorithms and Complexity Theory

CMPT 701-3 Computability and Logic  
CMPT 705-3 Design and Analysis of Algorithms  
CMPT 710-3 Computational Complexity  
CMPT 711-3 Bioinformatics Algorithms  
CMPT 813-3 Computational Geometry  
CMPT 814-3 Algorithmic Graph Theory  
CMPT 815-3 Algorithms of Optimization  
CMPT 881-3 Special Topics in Theoretical Computing Science

#### Area II – Networks, Software and Systems

CMPT 730-3 Programming Languages  
CMPT 731-3 Functional Programming  
CMPT 745-3 Software Engineering  
CMPT 755-3 Compiler Theory  
CMPT 760-3 Operating Systems  
CMPT 765-3 Computer Communication Networks  
CMPT 771-3 Internet Architecture and Protocols  
CMPT 777-3 Formal Verification  
CMPT 816-3 Theory of Communication Networks  
CMPT 885-3 Special Topics in Computer Architecture  
CMPT 886-3 Special Topics in Networks, Software and Systems

#### Area III – Artificial Intelligence

CMPT 721-3 Knowledge Representation and Reasoning  
CMPT 725-3 Logical Methods in Computational Intelligence  
CMPT 726-3 Machine Learning  
CMPT 823-3 Formal Topics in Knowledge Representation  
CMPT 825-3 Natural Language Processing  
CMPT 826-3 Automated Learning and Reasoning  
CMPT 827-3 Intelligent Systems  
CMPT 882-3 Special Topics in Artificial Intelligence

#### Area IV – Databases, Data Mining and Computational Biology

CMPT 505-3 Problem Based Learning in Bioinformatics  
CMPT 740-3 Database Systems  
CMPT 741-3 Data Mining

CMPT 829-3 Special Topics in Bioinformatics  
CMPT 842-3 Concurrency Control in Database Systems  
CMPT 843-3 Database and Knowledge-base Systems  
CMPT 864-3 Special Topics in Database Systems

#### Area V – Graphics, HCI, Vision and Visualization

CMPT 761-3 Image Synthesis  
CMPT 767-3 Geometric Modeling in Computer Graphics  
CMPT 773-3 User Interface Design  
CMPT 767-3 Visualization  
CMPT 768-3 Computer Music Theory and Sound Synthesis  
CMPT 820-3 Multimedia Systems  
CMPT 821-3 Robot Vision  
CMPT 822-3 Computational Vision  
CMPT 888-3 Special Topics in Computer Graphics, HCI, Vision and Visualization

**Table 2**

CMPT 880-3 Special Topics in Computing Science  
CMPT 889-3 Special Topics in Interdisciplinary Computing  
CMPT 894-3 Directed Reading

The course requirements for the MSc and PhD degrees each have a distribution requirement to ensure breadth across the major areas defined in table 1. This requirement specifies the number of courses selected from each of the five major areas.

### Supervisory Committees

A supervisory committee, at either the MSc or PhD level, consists of the student's senior supervisor, at least one other computing science faculty member, and others (typically faculty) as appropriate. The choice of senior supervisor should be made by mutual consent of the graduate student and faculty member based on commonality of research interests. The student and senior supervisor should consult on the remainder of the committee members.

*Graduate General Regulations 1.6* specifies that a senior supervisor be appointed normally no later than the beginning of the student's third term in the program, and that the remainder of the supervisory committee be chosen normally in the same term in which the senior supervisor is appointed.

### Research Topics Seminars

The research topics seminar series CMPT 891 is presented each year by faculty and graduate students to acquaint new students with faculty research interests, and to introduce relevant issues. Graduate students complete CMPT 891 in the first year.

### MSc Program

Students acquire breadth of knowledge through a course sequence, and depth of knowledge through completion and defence of a thesis or a project. Under normal circumstances, an MSc program is within six terms and not longer than eight. Students must choose between thesis and project options by the second term's end. Any change thereafter must be approved by the graduate program committee.

#### Breadth Requirement

Thesis MSc students must complete a breadth requirement consisting of five graduate courses (which is equivalent to 15 units). At least four of the courses must be drawn from table 1 so that at least one course must be from area I (Algorithms and Complexity Theory) and two of the four courses must be from two other areas.

Project MSc students complete a breadth requirement consisting of eight graduate courses (which is equivalent to 24 units). At least six of the courses

must be drawn from table 1 so that at least one course must be from area I (Algorithms and Complexity Theory) and so that the six courses cover at least three different areas.

Any 700 division course used to satisfy the MSc breadth requirement might be waived and replaced by an 800 division course. Students must produce convincing evidence to the graduate program committee that they have completed a comparable course or have comparable training in industry.

Any courses completed outside the school must be approved by the student's senior supervisor and the graduate breadth committee.

### Depth Requirement

Thesis MSc students are required to demonstrate depth of knowledge in their research area through a thesis seminar and defence based on their independent work. Students should consult with their supervisory committee members, and formulate and submit a written thesis proposal for approval. This should not be done any later than the third term.

Project MSc students must choose an area of specialization and submit a project report. Project topics may include a comprehensive survey of the literature of some computing science related research areas; implementation and evaluation of existing techniques/algorithms; development of interesting software/hardware applications.

Regulations specifying the examining committee's composition and procedures for the thesis or project exam appear in the *Graduate General Regulations*.

### PhD Program

Students will demonstrate breadth of knowledge as outlined below, and demonstrate the capacity to conduct original research through completion and defence of an original thesis. A PhD degree should be completed within 12 terms and should not require longer than 15 terms.

### Breadth Requirement

PhD students who already possess an MSc in computing science or a related field must complete a breadth requirement of four graduate courses (which is equivalent to 12 units of graduate course work). At least three of the courses must be drawn from table 1 so that they are all in different areas.

PhD students who do not possess an MSc in computing science or a related field must complete a breadth requirement of eight graduate courses (which is equivalent to 24 units of graduate course work). At least six of the courses must be drawn from table 1 so that at least one course must be from area I (Algorithms and Complexity Theory) and so that the six courses cover at least three different areas.

A PhD student must achieve a minimum 3.4 CGPA and passing grades in all courses.

### Depth Requirement

PhD students demonstrate depth of knowledge in their research area through a public depth seminar and oral examination, give a thesis proposal seminar, and submit and defend a thesis based on their independent work which makes an original contribution to computing science.

### Depth Examination

The depth seminar and examination may be scheduled at any time following the completion of breadth requirements. Typically this is between the fifth and seventh term in the PhD program; a recommendation is made by the graduate breadth committee, in proportion to the amount of course work required to satisfy the breadth requirement.



The examining committee consists of the supervisory committee and one or two additional examiners recommended by the examining committee, and approved by the graduate program committee. The depth exam centres on the student's research area. The examining committee, in consultation with the student, specifies the examination topics. The student prepares a written survey and gives a public depth seminar; the oral exam follows, and then the committee evaluates the student's program performance. The committee's evaluation is diagnostic, specifying additional work in weak areas if such exists. A second depth exam or withdrawal from the program may be recommended in extreme cases.

### Thesis Proposal

The student, in consultation with the supervisory committee, formulates and submits, for approval, a written thesis proposal consisting of a research plan and preliminary results. The student gives a seminar and defends the originality and feasibility of the proposed thesis to the supervisory committee. The thesis proposal is normally presented and defended within three terms of the depth examination.

### Thesis Defence

Regulations specifying the examining committee composition and procedures for the final public thesis defence are in the *Graduate General Regulations*. PhD students give a seminar; typically this will be about their thesis research and is presented in the interval between distribution of the thesis to the committee and the defence.

## School of Engineering Science

9801 Applied Science Building, 778.782.4371,  
778.782.4951 Fax, [www.ensc.sfu.ca](http://www.ensc.sfu.ca)

### Director

M. Saif BSEE, MSEE, PhD (Cleveland), PEng

### Graduate Program Chair

K.K. Gupta B.Tech (IIT, Dehli), MEng, PhD (McG), PEng

### Faculty and Areas of Research

For a complete list of faculty, see "School of Engineering Science" on page 82.

S. Arzanpour – vibration control, nonlinear systems, smart materials and structures, vibration based energy harvesting, Haptic devices and interfaces, flexible fixtures, robotic assembly

M. Bahrami – heat transfer and fluid flow in microchannels, transport phenomena in new materials, porous media and metalfoams, microelectronics cooling, energy management thermal contact resistance

B. Bahreyni – micro-electromechanical systems (MEMS), micro-sensors, resonant devices,

microfabrication, interface circuit design for MEMS  
I.V. Bajic – signal processing and applications in image and video coding, multimedia communications, and computational biology

M.F. Beg – computational anatomy: algorithms for segmentation, registration and shape analysis from medical images. Applications to structure and function in the brain, heart and peripheral muscles and nerves

J.S. Bird – signal processing, sonar, underwater acoustics, underwater acoustic transducers, bottom mapping and target detection applications

T.W. Calvert\* – information processing in man and machines, biomedical applications, graphics

J.K. Cavers\* – wireless communication: modulation, single- and multi-user detection, adaptive antenna arrays, iterative processing, sensor networks

G.H. Chapman – microelectronics, EMS, IC defect avoidance designs, imaging sensors, microprocessors, biomedical optics, microfabrication, laser applications  
V. Cuperman\* – signal processing, speech coding and recognition, multimedia information compression, digital communications, digital signal processing structures and hardware

J.C. Dill\* – information visualization, visual analytics, human-computer interaction

D.A. George\* – adaptive signal processing for communications and remote sensing systems

M.F. Golnaraghi – intelligent sensor systems: developing sensors for various industrial and biomedical applications for response and motion characterization and control; smart actuation systems: applications of magnetorheological fluids and elastomers, magnetostrictive material, piezoelectric ceramics, shaped memory alloys; nonlinear vibration analysis and control

B.L. Gray – microfluidics, interconnect and microassembly, biomedical microdevices and instruments, high-aspect-ratio microfabrication techniques

W.A. Gruver\* – distributed intelligence, multi-agent and holonic systems, wireless peer-to-peer networks. Applications to manufacturing, robotics, and automation systems

K.K. Gupta – algorithmic robotics, robot motion and path planning algorithms, obstacle avoidance, sensor-based motion planning, range sensing for robotics

R.H.S. Hardy – wireless communication networks, protocols and performance, access control and management of multimedia networks, wide area wireless and ad hoc networks

P.K.M. Ho – wireless communications, with emphasis on space-time coding and processing modulation, coding, detection, and channel estimation

R.F. Hobson – system-on-chip, low power embedded memory, embedded processor design

J.D. Jones – finite element analysis, heat transfer, thermodynamics and their application to micromachining; history and philosophy of engineering

B. Kaminska – wireless sensor networks, micro-medical devices, biosensors, wearable electronics; physiological, behavioral, and environmental monitoring; microelectronic design, test, and fault-tolerance; design and test automation algorithm

E. Kjeang – micro and nanofluidic energy conversion devices, innovative fuel cell architectures and materials, modelling and simulation of transport phenomena in porous media

D.C. Lee – computer and communications networks, wireless communications, multimedia transport

A.M. Leung – microelectronics, integrated circuit technology, integrated micromachined physical sensors, optical lithography

J. Liang – image/video compression, image/video processing, filter bank, wavelets, multimedia communications, wireless communications

C. Menon – control and design of mechatronic systems such as medical robotics, novel sensors/actuators, flexure/vibration control

M. Moallem – mechatronics, real-time systems, embedded computer control systems, smart sensors and actuators, robotics, control applications, linear and nonlinear systems

S. Muhaidat – multi-input multi-output (MIMO) communications, space-time coding, co-operative communications, performance analysis over fading channels, channel estimation and equalization, modulation and detection techniques, orthogonal frequency division multiplexing (OFDM)

M. Parameswaran – silicon and plastic MEMS technology development; microelectronic sensors and actuators; microelectronic device and processing simulation; biomedical diagnostic chips and systems

E.J. Park – biomechanics and mechatronics, biomedical technologies, wearable technologies, biorobotics, smart sensors and actuators, control applications

S. Payandeh – robotics, distributed robotics, mechanics-based modeling and rendering, deformable objects, multi-modal interface, haptic devices, haptic rendering, medical robotics

A.B. Rad – autonomous mobile robots, SLAM, advanced vehicle control systems, intelligent control, time delay systems, system identification, process control

N. Rajapakse – adaptive (smart) materials and structures, nanomechanics and multi-scale modelling, fracture mechanics, geomechanics

A.H. Rawicz – biomedical transducers (sensors and actuators), optical engineering and biophotonics, brain-computer interfaces, vision sensors, reliability of biomedical devices

S.N. Robinovitch – dynamics and control of human movement, postural stability and balance, osteoporosis and hip fracture prevention, orthopedic biomechanics, rehabilitation engineering

P. Saeedi – computer vision, machine learning in computer vision, motion/trajectory tracking, object recognition using vision, structure from motion, and automatic 3D map generation

M. Saif – estimation and control theory, model based fault diagnosis, large scale systems, optimization, and application of the above to engineering systems

S.P. Stapleton – passive RF/microwave circuits, GaAs monolithic microwave integrated circuits, nonlinear RF/microwave devices, active RF/microwave circuits

M.V. Sarunic – biomedical optical imaging, optical coherence tomography (OCT), low-coherence interferometry, optical microscopy

L. Shannon – computing system design; system-on-chip and network-on-chip; architectures; reconfigurable computing and FPGAs; embedded system design; on-chip CAD tools

S.P. Stapleton – power amplifier linearization, high efficiency power amplifier design techniques, high speed digital signal processing, monolithic microwave integrated circuits, integrated RF/DSP systems, high power device characterization

M. Syrzycki – microelectronics, semiconductor devices, analog and mixed signal CMOS ICs, integrated circuit technology, integrated sensor microsystems, vision sensors, design for manufacturability of analog and digital CMOS ICs

L. Trajkovic – communication networks (traffic characterization and modeling, protocols and network control algorithms); nonlinear systems (circuit simulation tools, theory of nonlinear circuits, analysis of complex networks)

R.G. Vaughan – personal and mobile communications, compact antennas, diversity antennas, propagation, signal processing, DSP techniques wireless systems, microwave techniques, multiport and MIMO systems

G. Wang – product design optimization, design theories and methodologies, process improvement for health care, alternative energy for transportation, advanced manufacturing

### Associate Members

For areas of research, refer to the department listed.

M. Donelan, Department of Biomedical Physiology and Kinesiology

J.A. Hoffer, Department of Biomedical Physiology and Kinesiology

\*emeritus

### Degrees Offered

The School of Engineering Science offers two distinct master's degrees, master of engineering (MEng), or master of applied science (MASc) and a doctor of philosophy (PhD) degree.

## Previous Credit

If the subject matter of a listed course has been previously completed with graduate credit, the course may not be completed again for credit.

## Master's Programs

The MEng program, for part-time study by practising engineers, is based on a course set normally offered in the evenings, plus a project performed in industry. The principal areas of study are electronics, communications and signal processing, intelligent systems, and control theory.

The MASc is a full-time program with primary emphasis on the thesis rather than course work, is more exploratory than the MEng, and covers a greater range of study.

## Admission Requirements

The normal admission requirement to the MEng and MASc programs is a bachelor's degree in electrical engineering, computer engineering, engineering science or a related area, with a 3.0 CGPA (B grade) from a recognized university, or equivalent. The number of faculty members limits the number of MASc students accepted into the programs.

## Transfer from MEng to MASc Program

Normally transfer from the MEng to the MASc will be considered under the following conditions.

### Undergraduate Grade Point Average

Minimum undergraduate CGPA of 3.3 is required.

### MEng Grade Point Average

On at least two courses, a minimum CGPA of 3.5 is required.

## Degree Requirements – MEng Program Course Work

MEng candidates complete at least 21 graduate course units. All students complete ENSC 820, specialize in an area of study, and complete required courses as follows. Students specializing in communications complete ENSC 805 and 810; electronics specialization students complete one of ENSC 851, 852 or 853; and intelligent systems or control theory specialists complete ENSC 801. Elective courses (see below) comprise the remainder of the 21 required units. Additional courses may be required to correct background deficiencies.

In addition, a student completes a project which is expected to take a minimum of two full-time equivalent months. If the project is performed in the student's workplace, the student receives academic supervision from the senior supervisor, and day-to-day supervision from the manager, or designated associate. Industrial supervisors, who are on the supervisory committee, will be appointed by the graduate chair in consultation with the senior supervisor. In very small companies, alternate arrangements will be made for industrial supervision.

In addition to submission of a technical report at project completion, the student makes an oral presentation to the supervisory committee and the graduate chair. A grade will be assigned based on the report's quality, the presentation, and the student's understanding of the subject. A grade of 'complete' or 'in progress' will reflect the majority decision. In the case of an 'in progress' grade, the student re-submits the project report and presents it again.

## MEng Fees

Students may complete their program before paying the minimum total fee. An additional payment is required prior to graduation to satisfy the minimum fee requirement of six full-time fee units. See "Graduate Fees" on page 227.

## Degree Requirements – MASc Program

MASc candidates complete 30 units consisting of a minimum of 12 units, plus a thesis equal to 18 units. In consultation with the senior supervisor, the courses will normally be selected from the list below, except that ENSC 820 may not be used towards the MASc course requirements. At least six units must be ENSC graduate courses. At most, three units may be directed studies.

Additional courses may be required to correct deficiencies in the student's background.

The thesis is based on an independent project with a significant research component. The student defends the thesis at an exam, in accordance with regulations.

## Graduate Research Internship

With the supervisory committee's approval, students accepted to the MASc or PhD programs may do research internship in industry. The responsibility for finding a suitable internship rests with the student, though the senior supervisor will provide guidance. In addition to satisfying degree requirements, students must satisfy the following conditions.

### Proposal

The proposal must be approved by the supervisory committee and by the graduate committee. The proposal must include the following.

- justification for undertaking the work in industry
- agreement regarding intellectual property and publications
- funding arrangement

### On-campus Presence

During the internship, the student must spend at least one day per week (or equivalent as approved by the graduate committee) on campus to meet with his/her supervisor and attend regular seminars. This is in addition to time spent on campus for course work.

### Oral Presentations

At least two supervisory committee oral presentations (not including thesis defence) on the progress of the student's work will be given during the internship.

### Duration

The duration of the internship will not exceed two terms for an MASc student, or four terms in the case of a PhD student.

### Failure to Comply

See "1.8 Progress, Withdrawal and Leave" on page 223 in the *Graduate General Regulations*.

## PhD Program

### Admission Requirements

For admission, a student must have a master's degree in electrical engineering, mechanical engineering, physics, computer science or a related field, have submitted evidence of capability to undertake substantial original research, and have identified a faculty member as senior supervisor.

See "1.3 Admission" on page 219 for other PhD program admission requirements.

### Residence Requirement

Students will conform to the residence requirement (see "1.7 Residence and Course Requirements" on page 222).

## Transfer from the Master's Program to the PhD Program

Proceeding to a PhD program without completing a master's degree is discouraged. However, a student may be admitted after at least 12 months in the MASc program if all requirements have been completed with a 3.67 or better CGPA, outstanding potential for research has been shown, and approval of the

student's supervisory committee, graduate program committee and senate graduate studies committee has been given.

## Degree Requirements

### Course Work

The minimum requirement is 18 units beyond that of the MASc degree. Six of these units will be for prescribed courses in the option in which the student is enrolled. Alternatives can be substituted with the approval of the student's supervisory committee. At most, six units may be senior undergraduate courses. At most, six units may be directed studies. At least six units must be within engineering science, except that ENSC 820-3 may not be used toward the course requirement of the PhD degree. Additional courses may be required to correct deficiencies in the student's background.

### Qualifying Examination

To qualify the student will submit a brief written research proposal and defend it orally to his/her supervisory committee within the first 24 months of admission. The proposal defence will be judged according to the feasibility and scientific merits of the proposed research, and demonstration of a sophisticated understanding of general material in the student's major area of research. This level of understanding is associated with senior undergraduate and first year graduate course material. The possible outcomes of the qualifying examination are 'pass,' 'marginal' and 'fail' (a student with 'marginal' will be required to re-submit the research proposal and defend it for the second and final time within six months and/or to complete more courses; a 'failing' grade requires withdrawal).

### Thesis

Students define and undertake original research, the results of which are reported in a thesis. An examining committee is formed as defined in "1.9.3 Examining Committee for Doctoral Thesis" on page 224. Students conform to residence requirements (see "1.7.3 Residence Requirement for the Doctoral Degree" on page 223). The senior supervisor will be an engineering science faculty approved by the graduate program committee.

The student's progress will be reviewed every 12 months by a supervisory committee of three or more faculty members. At each annual review, the student presents a summary of his/her work to date, with the first review being the research proposal defence described in the section for *Qualifying Examination* (see above). Students not making satisfactory progress in their research topics, or failing to demonstrate satisfactory knowledge and understanding of recent publications in their general area of research, or failing to have their revised research proposal approved by the supervisory committee within 20 months of admission, may be required to withdraw as per section "1.8.2 Review of Unsatisfactory Progress" on page 223.

## Directed Studies and Special Topics Courses

Directed studies (ENSC 891, 892) and special topics (ENSC 893, 894, 895) courses may be offered by the following research groups, subject to student interest and demand.

### Communications Group

estimation theory  
network performance evaluation  
optical telecommunications networks  
advanced modulation techniques  
spread spectrum communications  
information flow and decision theory  
adaptive arrays

active and passive sonar systems  
 synthetic aperture radar  
 multimedia signal processing  
 multimedia communications  
 active and passive sonar systems  
 synthetic aperture radar  
 multimedia signal processing  
 multimedia communications  
 ad hoc and sensor networks  
 small antennas

#### **Microelectronic group**

analog VLSI signal and information processing  
 applied solid state electronics  
 CMOS compatible micromachining  
 embedded VLSI systems  
 low power, low noise, high frequency circuits  
 optoelectronic devices  
 photonics and laser applications in engineering  
 reliability engineering

sensor – principles and applications  
 VLSI circuits for telecommunications

#### **Intelligent Systems and Control Group**

design optimization  
 algorithms for robotics  
 intelligent design  
 intelligent control of robotic systems  
 intelligent manufacturing systems  
 model-based fault diagnostics in control systems  
 multivariable control systems  
 nonlinear control systems  
 numerical modelling of heat transfer  
 robotic synthesis

#### **Courses Offered by Other Departments**

These courses are of particular interest to engineering science students. Descriptions can be found in the "Course Catalogue" on page 311.

BUEC 820-4 Analysis of Dynamic Processes  
 CMPT 720-3 Artificial Intelligence  
 CMPT 750-3 Computer Architecture  
 CMPT 815-3 Algorithms of Optimization  
 CMPT 821-3 Robot Vision  
 CMPT 822-3 Computational Vision  
 CMPT 827-3 Expert Systems  
 CMPT 851-3 Fault-Tolerant Computing and Testing  
 CMPT 852-3 VLSI Systems Design  
 CMPT 853-3 Computer-Aided Design/Design Automation for Digital Systems  
 KIN 885-3 Seminar on Man-Machine Systems  
 MATH 851-4 Numerical Solutions of Ordinary Differential Equations  
 PHYS 425/821-3 Electromagnetic Theory  
 PHYS 810-3 Fundamental Quantum Mechanics  
 PHYS 861-3 Introduction to Solid State Physics

# Faculty of Arts and Social Sciences

6168 Academic Quadrangle, 778.782.4414 Tel,  
778.782.3033 Fax, www.sfu.ca/arts

## Dean

L. Cormack BA (Calg), MA, PhD (Tor)

## Associate Deans

P. Budra BA, MA, PhD (Tor)

P. McFetridge BA, MA, PhD (S Fraser)

## Assistant Dean

V.G. Rose BA (S Fraser), MBA (Tor)

## Graduate Diploma Offered

graduate diploma in urban studies

## Graduate Degrees Offered

master of arts

master of arts in liberal studies

master of public policy

doctor of philosophy

doctor of philosophy under special arrangements

## General Regulations

See "Graduate General Regulations" on page 219 for admission requirements, enrolment, residence requirements and time limit for completion of degrees.

## Master of Arts Co-operative Education Program

master of arts students in good standing with a minimum grade point average of 3.0 may apply to enter the co-op education program after satisfactory completion of courses as approved by the academic program in which they are completing their MA.

Work term arrangements are made through the Faculty of Arts and Social Sciences co-op co-ordinator at least one term in advance. For details, see "Co-operative Education" on page 212.

## Department of Archaeology

9635 Education Building, 778.782.4727 Tel,  
778.782.5666 Fax, www.sfu.ca/archaeology

## Chair

A.C. D'Andrea BSc (Tor), MSc (Lond), PhD (Tor)

## Graduate Program Chair

R.W. Jamieson BSc (Trent), MA (William and Mary), PhD (Calg)

## Faculty and Areas of Research

See "Department of Archaeology" on page 92 for a complete list of faculty.

D.V. Burley – historical archaeology, cultural resource management, theory, northwest North America, South Pacific

R.L. Carlson – archaeology and ethnology North America, particularly Northwest Coast, Southwest, material culture, and early peopling of the New World, museology, primitive art

M. Collard – biological anthropology, human evolution, primate evolution, evolutionary archaeology, phylogenetics, systematics and taxonomy

A.C. D'Andrea – paleoethnobotany, early agriculture, ethnoarchaeology, subsistence, East Asia, Africa

J.C. Driver – zooarchaeology, cultural ecology, Western Canada, American Southwest

B.M.F. Galdikas – primate behavior, orangutan research and conservation

B.D. Hayden – lithics, ethnoarchaeology, Northwest Interior, Southeast Asia, hunter/gatherers, cultural ecology, method and theory

R.W. Jamieson – historical archaeology, Spanish colonialism, domestic architecture, material culture, ethnohistory, Andean South America

D. Lepofsky – Northwest Pacific, Oceania, cultural ecology, paleoethnobotany, households, prehistoric land use

G.P. Nicholas – northeast North America and Plateau, hunter/gatherers, cultural ecology, indigenous peoples and archaeology, wetlands, Quaternary studies

R.J. Reimer\*\* – northwest coast, landscape archaeology, oral history, indigenous and alpine archaeology, geoarchaeology, archaeometry

a.g. ross\*\* – art history, artistic and oral traditions, First Nations craft, indigenous environmental practice, studio art practice

M.F. Skinner – physical anthropology, skeletal biology, forensic anthropology, paleoanthropology, paleopathology

J.R. Welch\* – cultural heritage stewardship, Apache ethnohistory, archaeology and ethnology of the American Southwest, resource management practice and policy

D. Yang – physical anthropology, ancient DNA, DNA diagnosis of diseases from ancient remains, molecular forensic anthropology, molecular archaeology, North America, East Asia, Europe

E.C. Yellowhorn\*\* – plains and fur trade archaeology, oral history, traditional knowledge, ethno-science, archaeoastronomy, indigenous archaeology

## Adjunct Faculty

R.R. Adams – archaeology and ethnology of southeast Asia and northwestern North America

J. Cybulski – physical anthropology, forensic anthropology, Pacific Northwest

J.P. Delgado – historical archaeology, nautical archaeology, museology

R.A. Lazenby – biological and forensic anthropology

G.M. MacDonald – Northwest coast art and archaeology, museology

A.D. McMillan – archaeology and ethnology of Canada, particularly Northwest coast, native arts

M.C. Wilson – geoarchaeology, zooarchaeology, ethnoarchaeology, human use/construction of landscape, Western Canada, North American Plains, China, West Africa

## Associate Members

For areas of research, refer to the department listed.

J.J. Clague, Department of Earth Sciences

D.J. Huntley, Department of Physics

R.W. Mathewes, Department of Biological Sciences

P. Nepomnaschy, Faculty of Health Sciences

\*joint appointment with resource and environmental management

\*\*joint appointment with First Nations studies

## Areas of Study

The department offers specialization in archaeometry, art, ceramic analysis, cultural resource management, ethnoarchaeology, forensic anthropology, geoarchaeology, historical archaeology, lithic analysis, palaeoanthropology, palaeoethnobotany, skeletal biology and zooarchaeology.

The student gains a comprehensive understanding of the discipline and strives to acquire a general knowledge of world prehistory, physical anthropology, and archaeological theory and method, in addition to gaining knowledge and expertise in particular areas of research interest. Depending on enrollments,

individual or group courses can be arranged in addition to regularly scheduled courses.

## Degree Requirements

A distinction is made between program enrolment and formal advancement to degree candidacy. A candidate is a student who successfully completes advancement to candidacy requirements (defined below). Normally, advancement happens once the Simon Fraser University residency is fulfilled, but not later than the end of the ninth term after PhD admission and not later than the end of the sixth term for MA students.

## MA Program

This program consists of these sequential steps: course requirements, thesis prospectus, colloquium presentation, advancement to candidacy, and thesis completion and defence. Students are expected to complete all MA program requirements in a maximum of nine terms of full-time enrolment.

## Course Requirements

Students complete a minimum of three graduate courses including ARCH 871 and 876, and a thesis. They may be required to complete additional courses and must complete ARCH 872/873 each term that it is offered. ARCH 873 credit is not part of the normal MA requirement. ARCH 872 and 873 grading will be satisfactory/unsatisfactory (S/U). Course requirements, thesis prospectus and colloquium presentation should be completed by full-time students by the end of the second term.

## Advancement to Candidacy

Advancement to candidacy requirements follow.

- completion of two of the minimum three graduate courses.
- preparation of thesis prospectus. The prospectus discusses the proposed research and general background relevant to the research and is submitted to the supervisory committee and approved before step 3 is undertaken.
- after approval of the thesis prospectus, and after consultation between the student and his/her supervisory committee, the student will present a colloquium, the topic of which shall be the substance of the prospectus.

The colloquium is not considered a defence of the prospectus *per se*, but is a means whereby the student may benefit from the department's expertise.

## Thesis

After the above, students advance to candidacy and complete and defend the thesis. The defence topic should be the thesis itself and related matters. It should be focussed on problem-oriented research, involving the conceptualization of a problem, and the collection, analysis and interpretation of data. It should not normally exceed 100 pages of text. Students are expected to complete the MA thesis in a maximum of six terms of full-time enrolment.

## PhD Program

This program consists of these sequential steps: course requirements, comprehensive exam, thesis prospectus, colloquium presentation, advancement to candidacy, thesis completion and defence.

## Course Requirements

Course requirements are determined in consultation with the supervisory committee. In addition to the comprehensive exam and thesis, normal course requirements consist of a minimum of three graduate courses including ARCH 871 and 876. Students may be required to complete additional courses and are must complete ARCH 872/873 each term that the course is offered. ARCH 873 credit does not constitute part of the normal course requirements. Grading for ARCH 872/873 courses will be restricted to satisfactory/unsatisfactory (S/U).

## Comprehensive Exam

Students write a comprehensive examination prior to candidacy to test general knowledge in archaeology and in three regional or topical areas. Grading is on a pass/fail basis but the examination or parts thereof may be repeated once, at the department's discretion.

## Advancement to Candidacy

Formal advancement to candidacy shall take place when the following have been completed.

- completion of two of the minimum three graduate courses and successful performance in the comprehensive exam
- preparation of thesis prospectus. The prospectus' purpose is to discuss the proposed research and general background relevant to the research. It is submitted to the supervisory committee and approved before step 3 is completed.
- after approval of the thesis prospectus, and after consultation between the student and his/her supervisory committee, the student will present a colloquium, the topic of which shall be the substance of the prospectus.

The colloquium is not considered a defence of the prospectus, but a means whereby students may benefit from the department's collective expertise.

## Thesis

After the above, students advance to candidacy, and complete and defend the thesis. The defence topic will be the thesis itself and related matters. The thesis should represent original, problem-oriented research which makes a significant contribution to knowledge.

## Language Requirement

A knowledge of a language other than English is desirable, but there are no prescribed language requirements. However, if knowledge of a language is necessary for the field work or reading, he/she will be required to attain the necessary language proficiency.

# School of Criminology

10128 Arts and Social Sciences Complex,  
778.782.4762/3213 Tel, 778.782.4140 Fax,  
yanciw@sfu.ca, crimgrad@sfu.ca,  
www.sfu.ca/criminology

### Director

R.M. Gordon BA (La Trobe), MA (S Fraser),  
PhD (Br Col)

### Graduate Program Director

N.T. Boyd BA (WOnt), LLB, LLM (Law Soc Upper  
Canada)

### Faculty and Areas of Research

See "School of Criminology" on page 99 for a complete list of faculty.

G.S. Anderson – forensic, medical and veterinary entomology

M.A. Andresen – spatial crime analysis, geography of crime, environmental criminology, applied spatial statistics and geographical information analysis, (critical) quantitative methods

E. Beauregard – decision-making, offending process, *modus operandi*, situational approach to crime, sex offending, homicide, criminal profiling, psychology of criminal investigation, clinical criminology, typologies  
L.S. Bell – forensic spectrometry, human regionalism, remote sensing and detection, physical anthropology, international crimes and genocide

M. Bouchard – illegal drug markets, criminological theory, criminal careers, criminal failure and criminal achievement, criminal innovations, crime trends, police effectiveness, estimating the size of criminal populations

E.O. Boyanowsky – community standards and the law, environment, emotion and behavior, media and crime, group behavior, police, gangs and juries

N.T. Boyd – critical analysis of Canadian criminal law, homicide, Canadian narcotics legislation, legal control of pornography

P.J. Brantingham – environmental and historical criminology

P.L. Brantingham – environmental criminology, crime prevention through environmental design, criminal justice planning, policy evaluations

J. Brockman – self regulation, crimes and misconduct in the professions, white collar and corporate crime, financial crimes, criminal procedure and evidence, the use of social science research as evidence in court, feminist jurisprudence, methodology and perspectives, women in the professions

B. Burtch – penology, corrections, sociology of law, social control, reproduction and law, state theory, electronic monitoring of offenders

B. Cartwright – criminological theory, sociology of deviance, school violence, qualitative research methods, cyber-research

R.R. Corrado – comparative juvenile justice, terrorism, evaluation research, administration of justice in Canada

G.J. Davies – statistical analysis, political terrorism, communities and crime

E. Elliott – social philosophy of punishment and abolitionism, critical analysis of the prison, women in prison, fear of crime

S. Fabian – criminal harassment, intimate partner violence, research methods, policy analysis, academic dishonesty

W.G. Glackman – research methodology, multivariate statistical techniques, forensic psychology, perceptions of crime

R.M. Gordon – adult guardianship/protection law, abuse and neglect of the elderly, health law including mental health law, young offenders and youth justice, gangs and related groups, restorative justice

C.T. Griffiths – policing, Native American criminality, delinquency and involvement in the criminal justice system, delivery of criminal justice services in the North, cross cultural studies in juvenile justice

M.A. Jackson – criminal justice administration and planning, judicial attitudes and sentencing behaviour, corrections (including alternatives to incarceration), law enforcement management, psychiatric decision-making, elderly, native, and female offenders, restorative justice

B. Kinney – court sentencing patterns, data interoperability in criminal justice databases

J. Lowman – prostitution, prostitution law and law enforcement, sociology of punishment, critical theory, research ethics

P. Lussier – criminological theory, developmental life-course criminology, interpersonal violence, sexual offending, prediction and classification, risk assessment, quantitative research methods

D. MacAlister – criminal law, criminal procedure and evidence, civil liberties, sentencing theory, restorative justice, policing and police powers, criminal justice accountability, wrongful conviction, legal responses to terrorism, mental health law, jurisprudence

N.A. Madu – correctional counseling, ethical dimensions and issues for helping professionals,

rights of persons with developmental disabilities, effective communication and wellness, Zen and the art of helping, application and process of therapeutic theory, multiple dimensions of human potential  
B. Morrison – social regulation, civil society, self-interest and interdependence, compliance and deviance, reason, emotion and behavior, restorative justice, particularly in the context of schools and education

J.A. Osborne – criminal law and procedure, human rights and civil liberties, administration of criminal justice, juvenile justice

T.S. Palys – research methodology, evaluation and assessment, decision-making, philosophy of science/sociology of knowledge

S.N. Verdun-Jones – criminal law, procedure and evidence, comparative criminal law and procedure, jurisprudence, sociology of law, interdisciplinary criminal justice research, history of criminal justice

J.S. Wong – policy analysis, program evaluation, cost-benefit analysis, meta analysis

### Associate Members

For areas of research, refer to the department listed.

S. Duguid, Department of Humanities

J. Whately, Continuing Studies

C. Yerbury, Continuing Studies

## Degrees Offered

The graduate programs lead to MA and PhD degrees in criminology, and MA in applied legal studies (notaries).

## Areas of Study and Research

The graduate programs concentrate on advanced academic study and have a strong research emphasis. The broad goal is to prepare students for careers in teaching criminology, in criminological research and in policy-making in criminal justice.

The graduate programs' emphasis fosters a spirit of inquiry and creative endeavor among the students, to develop critical and analytical capabilities, and training in various criminological research techniques.

## Centre for Restorative Justice

See "Centre for Restorative Justice" on page 464.

## Criminology Research Centre

See "Criminology Research Centre" on page 466.

## Feminist Institute for Studies on Law and Society

See "Feminist Institute for Studies on Law and Society" on page 466.

## Institute for Studies in Criminal Justice Policy

See "Institute for Studies in Criminal Justice Policy" on page 467.

## MA Program

### Admission Requirements

Students holding a baccalaureate or equivalent from a recognized institution must meet the admission requirements for graduate studies. See "1.3.2 Admission to a Graduate Diploma Program" on page 219 and also see "1.3.8 Conditional Admission" on page 220.

Normally, an applicant should have completed at least one course in social science research methods and one undergraduate introductory course in statistics.

Official transcripts and a short statement of interest, which includes a description of previous employment and research or other relevant work, is required.

Letters of recommendation from those who are familiar with their work are required.

An application fee of \$75 (Canadian) is paid online by charge card at time of application submission.

The deadline for receipt of the online application and supporting documents, for entrance commencing in the fall term, is February 1. Applicants are informed of the outcome as soon as possible thereafter.

## Degree Requirements

The school offers MA degrees through two research options: a thesis option, and a course work, practicum and project option. Students elect which option to pursue in consultation with their senior supervisor.

### Thesis Option

This option requires

- completion of a minimum of 18 units of course work as specified below, and
- satisfactory completion and oral defence of an original MA thesis

The course work requirement includes

CRIM 800-3 Theories of Crime  
CRIM 840-3 Proseminar  
CRIM 860-3 Research Methods I

and one of

CRIM 861-3 Research Methods II  
CRIM 862-3 Research Methods III  
CRIM 863-3 Research Methods IV

plus at least six units selected from additional graduate curriculum course offerings.

The thesis will not normally be more than 100 pages in length, including bibliography and footnotes, but exclusive of appendices.

### Course, Practicum and Project Option

This option requires

- completion of a minimum of 21 units of course work as specified below, and
- satisfactory completion of a supervised field practicum, and
- satisfactory completion of a practicum related research project.

The course work requirement includes

CRIM 800-3 Theories of Crime  
CRIM 810-3 The Phenomena of Crime I  
CRIM 840-3 Proseminar  
CRIM 860-3 Research Methods I  
CRIM 869-3 Professionalism and Criminal Justice

plus at least six units selected from additional graduate curriculum course offerings.

The practicum is met by satisfactory completion of a supervised one-term field placement in a criminal justice related agency. The practicum requires a paper that is related to the field placement, and this report is not normally more than 50 pages in length, including bibliography and footnotes, but exclusive of appendices. The paper is to be presented in the School of Criminology in a publicly advertised forum. The practicum paper does not require and should not contain original data.

## Satisfactory Performance

The candidate's progress is assessed at least once per year by the school (spring and fall). A student who performs unsatisfactorily is not permitted to continue in the program, subject to the review procedure described in *Graduate General Regulation* 1.8.2.

## Applied Legal Studies (Notaries Public) Program

This master's program is for students intending to practice as notaries public. The degree is granted on the successful completion of a 16 month course of study, and prepares students for admission to notarial

practice (subject to further requirements that are set out below), and for business and public service.

The number of students entering notarial practice in British Columbia is ultimately governed by the Society of Notaries Public of British Columbia, and accordingly, conferral of this degree is no guarantee of a position in either the necessary years of articles (described below) or in notarial practice. However, enrolment in the program is limited to approximate the number of future openings anticipated in the province.

## Admission Requirements

Applicants should regard their satisfaction of the entrance requirements as meaning only that they are eligible for selection. Because of the competition for admission, a regular applicant must have an undergraduate academic average substantially higher than the minimum in order to have a reasonable chance of admission. Certain factors such as financial hardship, learning disabilities or other disadvantages, or ethnic background, may be considered in the discretionary category. Note that only a limited number of positions will be available each year in the discretionary category.

To be eligible for selection, an applicant must have

- obtained an undergraduate degree in an approved course of study from a degree granting university with a cumulative grade point average of 3.0 or higher, or
- successful completion of 90 or more units of an approved course of study leading to an undergraduate degree at a degree-granting university with a cumulative grade point average of 3.0 or higher, and possess sufficient and appropriate work experience relevant to notarial practice that, in the view of the admissions committee, compensates for the lack of a completed degree, or
- met the criteria for discretionary applicants as set out below

Applicants are responsible for providing full documentation. Incomplete applications will not be evaluated.

### Discretionary Applicants

Special life factors may impede the ability of an otherwise promising candidate to satisfy some of the regular admission criteria. Accordingly, the admissions committee may consider factors such as age, disability, financial disadvantage, membership in an historically disadvantaged group, or any other factors that the applicant identifies. These factors are considered in the context of the applicant's life achievements and work experience, including community or charitable volunteerism.

Discretionary applicants must have completed the first two years of an approved course of study leading to an undergraduate degree at an approved college or university. A personal statement, two reference letters and, where appropriate, documentation such as medical reports are required. Each applicant is considered individually on their merits. An interview before the admissions committee may be required.

## Application

Potential applicants are strongly encouraged to contact the Society of Notaries Public of British Columbia before submitting an application.

The following must be submitted by February 1.

- completed application form which can be obtained from the Dean of Graduate Studies website
- all post-secondary academic transcripts
- application fee of \$75
- other documentation as required (e.g. letters of reference, medical certificates, special circumstances letters, or other supporting documentation for discretionary applicants)

## Degree Requirements

The following ten graduate courses are required. Courses are offered in the following sequence.

### Fall Term

ALS 601-3 Canadian Law and Legal System  
ALS 602-3 Legal Research and Writing  
ALS 603-3 Legal Philosophy

### Spring Term

ALS 610-3 Contracts  
ALS 611-3 Real Property I  
ALS 620-3 Selected Topics in Applied Legal Studies

### Summer Intersession

ALS 612-3 Real Property II  
ALS 615-3 Personal Planning

### Fall Term

ALS 630-6 Topics in Legal Practice  
ALS 631-3 MA Examination

Fall term courses employ a mixed mode of delivery where students attend campus for two weeks at the term's start, and for one week at the end. Weeks three through 12 are delivered via distance education. Students attend campus for the summer intersession (from early May to mid June). The final capstone course follows the same mixed delivery mode when students complete a final examination (normally toward the end of the fourth term) that shows mastery and critical engagement with the depth and breadth of the program's subject matter.

Those who do not wish notary public accreditation may be permitted to substitute up to two courses with the approval of criminology's director of graduate programs. Only one of these courses may be a directed readings course.

## PhD Program

### Admission Requirements

The minimum admission requirements are stated in "1.3.4 Admission to a Doctoral Program" on page 220. Normally, an applicant should have at least one course in social science research methods and one undergraduate introductory statistics course. Direct admission may be approved for those with an MA in criminology, an MA in a discipline other than criminology, or an MSc and, under exceptional circumstances, with an undergraduate degree or its equivalent with a minimum 3.5 CGPA.

Applicants submit a research interests statement and at least two previous academic work examples.

In exceptional circumstances, those with a BA (or equivalent) may be admitted if University regulations are met, original undergraduate research is demonstrated, and the applicant is recommended for direct entry by at least two criminology faculty who are eligible to teach or supervise in the PhD program. Those who meet the GPA requirement and have demonstrated research ability through field criminal justice experience may also be considered on recommendation of at least two program faculty members. Those so admitted will have their status reviewed by the end of the second term after admission. The graduate program committee determines the candidate's ability to complete the PhD by direct entry. The student will either be confirmed as an approved PhD candidate or directed to seek master's program admission.

Because many disciplines are allied to criminology, the graduate program committee reserves the right to determine equivalent courses already completed in the applicant's master's program. At the time of admission, the graduate program committee may waive up to 15 units of requirements.

An application fee of \$75 (Canadian) is paid online by charge card at time of application submission. The

deadline for receipt of the online application and supporting documents, for entrance commencing in the fall term, is February 1. Applicants will be informed of the outcome as soon as possible thereafter.

**Note:** Although applicants with two prior degrees from the School of Criminology may be accepted into the PhD program, this is not considered a good practice.

### Degree Requirements

PhD candidates must complete a minimum of 33 units consisting of

- at least three research methods courses (nine units)
- theories of crime I (three units)
- proseminar (three units)
- at least 18 units selected from additional curriculum offerings
- achieve satisfactory completion and oral defence of an original PhD thesis

A maximum of nine units may be completed in another department or university with supervisory committee and graduate program committee approval. These courses may be accepted as partially meeting PhD program requirements.

All students write comprehensive/preliminary exams in two curriculum areas: theory and methods. Normally, students are expected to finish courses and comprehensives within two years of program entry.

### Dissertation Procedures

In the term after comprehensive exams are passed, candidates develop a thesis prospectus based on original research defining the proposed investigation and demonstrates the relationship between it and existing scholarship. The thesis proposal is presented to the supervisory committee and, on approval, is circulated to faculty and resident graduate students and presented at a colloquium.

The thesis is defended in oral examination by an examining committee constituted under "1.9.3 Examining Committee for Doctoral Thesis" on page 224 in the *Graduate General Regulations*.

### Satisfactory Performance

The progress of each candidate is assessed at least twice a year (spring and fall). Students who perform unsatisfactorily may not continue, subject to review procedures of unsatisfactory progress described in "1.8.2 Review of Unsatisfactory Progress" on page 223 of the *Graduate General Regulations*.

## Department of Economics

3602 Diamond Building, 778.782.3562/3508 Tel, 778.782.5944 Fax, [www.sfu.ca/economics](http://www.sfu.ca/economics)

#### Chair

N. Schmitt Licence (Lausanne), MA (Car), PhD (Tor)

#### Associate Chair

G.M. Myers BA (Qu), MA, PhD (McM)

#### Graduate Program Chair

C. Lülfesmann MSc, PhD (Bonn)

#### Faculty and Areas of Research

See "Department of Economics" on page 104 for a complete list of faculty.

D.W. Allen – microeconomic theory, law and economics

D. Andolfatto – dynamic general equilibrium theory, macroeconomics, labor markets, monetary theory

B. Antoine – theoretical econometrics, financial econometrics

J. Arifovic – macroeconomics, monetary theory, learning and adaptation in economics

P. Curry – microeconomic theory, law and economics

D. Devoretz – development, immigration, demography economics

G. Dow – microeconomic theory, firm organization, economic prehistory

G. Dunbar – macroeconomics, applied microeconomics

S.T. Easton – international trade, economic history

J. Friesen – labor economics

R. Gençay – time series methods, financial econometrics, computational economics

R.G. Harris – international economics, economic theory

D.S. Jacks – economic history, international trade and finance

R.A. Jones – monetary theory, macroeconomics, finance

A.K. Karaivanov – development, mathematical economics, microeconomic theory

K. Kasa – macroeconomics, international economics

A. Kessler – political economy, contract theory, public economics

B. Krauth – applied macroeconomics, econometrics

P. Lavergne – economic theory, applied microeconomics

C. Lülfesmann – contract theory, industrial organization

F. Martin – macroeconomics, public finance, monetary theory

S. Mongrain – public finance, microeconomic theory, law and economics

D. Monte – game theory, bounded rationality

G.M. Myers – public and urban economics

N.D. Olewiler – natural resources, environmental economics

K. Pendakur – labor economics, public finance, econometrics

C.G. Reed – economic history, applied microeconomics, law and economics, economic prehistory

M. Rekkas – economic policy, political economics, industrial organization

A.J. Robson – game theory, uncertainty, preferences for status, biological evolution of economic preference

N. Schmitt – international trade, industrial organization

R.W. Schwindt – industrial organization, international trade, public policy toward business

L. Visschers – macroeconomics, labor, frictional markets, applied theory

S.D. Woodcock – labor economics, econometric theory

J. Xu – international macroeconomics, monetary economics, macroeconomics

\*joint appointment with business administration, home department is economics

### MA Program

#### Admission Requirements

See "1.3 Admission" on page 219 for University admission requirements. As well, the department requires that the applicant must hold a bachelor's degree with honors in economics or business administration, or must complete additional work to that standard. Normally, the graduate admissions committee will specify the appropriate additional requirements at the time of admission.

#### Degree Requirements

The MA program has four options. Under each, ECON 798 is required in addition to other work, unless a grade acceptable to the graduate program committee has been obtained in an equivalent courses. An undergraduate course can be used with the approval of the graduate program committee.

thesis option – seven courses including core work plus an original thesis

extended essay option – seven courses including core work plus two extended essays

project option – eight courses including core work plus a research project

course option – nine courses including core work plus ECON 997

#### Core Course Work

The core course work will normally consist of

- microeconomics – ECON 802
- macroeconomics – ECON 807 or 808
- econometrics – ECON 835 and either ECON 836 or 837

#### Elective Course Work

The remaining courses beyond those designated as core work will be ECON graduate courses or, with permission of the graduate program chair, courses in graduate business administration and other subjects.

#### Research and Oral Examination

Under the thesis, extended essay or project option, research papers must meet the standards set out in the *Graduate General Regulations* (page 219). An oral examination is required covering the students' written research in particular, and program in general, as outlined in the *Graduate Regulations*.

#### Final Examination

Under the course option, there will be a final examination (ECON 997) on core subjects, which normally will occur during the final examination period of the students' third term in the program.

#### Co-operative Education

This optional program provides work experience that complements MA studies. MA students in good standing with a minimum 3.0 GPA may apply to co-op after satisfactory completion of ECON 802, 807 (or 808), 835 and 836 or equivalent. The program consists of two separate work terms. Arrangements are made through the Faculty of Arts and Social Sciences co-op co-ordinator at least one term in advance (see page 212). To participate, prior approval from the graduate chair in the Department of Economics is required.

### PhD Program

#### Admission Requirements

See "1.3.4 Admission to a Doctoral Program" on page 220. Also required is an MA with graduate work in core areas equivalent to ECON 802, 807, 835 and 836. Any core area deficiency must be filled by completing the appropriate course(s) in addition to the course work normally required. In certain cases, students may be transferred into the PhD program from the MA program after meeting MA core and credit requirements (16 courses beyond the BA honors is required for such a PhD program).

#### Degree Requirements

This program allows specialization in economics, economics and business administration, or economics and a related discipline. Normally, every PhD program will include the following:

1. Successful performance in 11 approved courses beyond the economics MA requirements listed above. Those specializing in economics must include ECON 803, 804, 808, 809, 837 and either 838 or 839; those specializing in economics and business administration must include ECON 803 and 804, or 808 and 809. Those specializing in economics must also complete ECON 900 which does not count towards the 11 courses. Other courses may be drawn

from those normally offered at the graduate level by this or other related departments. Normally, a student must complete at least five courses of regularly scheduled course work within this department; exceptions to this rule must be approved by the student's supervisory committee and the graduate program committee.

2. Successful performance in written comprehensive examinations.

2.1 Students specializing in economics write comprehensive examinations in economic theory and one other field. In addition, students complete a field either by successfully completing two courses approved by the graduate program chair (other than required or readings courses) with at least an A-average, or a comprehensive examination in the field. The economic theory comprehensive exams consist of separate examinations in micro and macroeconomic theory. The microeconomics comprehensive theory examination usually encompasses topics and readings covered by ECON 802, 803, and 804. The macroeconomics comprehensive theory examination usually encompasses topics and readings in ECON 807, 808, and 809. Comprehensive exams in other fields normally encompass topics and readings presented in the main courses in those fields.

2.2 Students specializing in economics and business administration must write a comprehensive economic theory exam covering topics and guideline readings of either microeconomics (ECON 802, 803, and 804), or macroeconomics (ECON 807, 808 and 809). The student will complete three fields, subject to the following: a) at least two field requirements are satisfied by written examinations; b) at least two are drawn from accounting, finance, management science, marketing and organization behavior.

2.3 Arrangements for students specializing in economics and a related discipline, or economics and business administration and a related field will be recommended by the student's supervisory committee and approved by the department's graduate program committee.

2.4 Normally, full time students write micro/macro theory comprehensive exams at the first opportunity after the exam period of their second term.

3. An original and significant thesis completed by the candidate under department faculty supervision.

## Dissertation Procedures

### Thesis proposal seminar

This will be given by each candidate to fulfil the ECON 900 course requirement. ECON 900 will be completed in the summer term following completion of the student's theory comprehensive examinations. Each candidate produces a written paper, makes it available to all interested department members and presents it on a pre-announced date in the departmental seminar. The candidate's supervisory committee should attend and arrange for others interested to also attend. That committee, along with the candidate, should decide on the future course of thesis research paying due regard to the comments that have been received.

### Thesis core and a thesis seminar

These should be given by each candidate after the supervisory committee agrees that the thesis is substantially complete and before it is formally approved for defence. The thesis core should be a paper that describes the major original contributions of the thesis (preferably in a form appropriate for journal submission) and should be available to all interested department members.

## Thesis defence

Procedures for the thesis defence are described in the *Graduate General Regulations* (see "1.11 Publication of Thesis" on page 225).

## Satisfactory Performance

Each candidate's progress is assessed at least once a year in the fall term. Any student who performs unsatisfactorily is subject to the review of unsatisfactory progress described in "1.8.2 Review of Unsatisfactory Progress" on page 223.

## Research on Immigration and Integration in the Metropolis

4653/4655 Diamond Building, 778.782.4575 Tel, 778.782.5336 Fax, [www.riim.metropolis.net/](http://www.riim.metropolis.net/)

RIIM is one of four Canadian research centres studying the impact of Canadian immigrants on local economies, family, educational systems and physical infrastructure of cities. RIIM concentrates only on Vancouver but has links to all other Canadian metropolis sites and the world. This research group, based at Simon Fraser University, the University of Victoria and the University of BC, investigates immigrant impact in Vancouver.

## Department of English

6129 Academic Quadrangle, 778.782.3136 Tel, 778.782.5737 Fax, [www.sfu.ca/english](http://www.sfu.ca/english)

### Chair

C. Gerson BA (S Fraser), MA (Dal), PhD (Br Col), FRSCan

### Graduate Program Chair

C. Lesjak BA (Swarthmore), MA, PhD (Duke)

### Faculty and Areas of Research

See "Department of English" on page 256 for a complete list of faculty.

R. Arab – Shakespeare, early modern English literature, drama and culture, gender and class  
S. Brook – Post-war British literature, British cultural studies, feminist and gender theory, theories of affect, urban theory  
P. Budra – Shakespeare, drama to 1642, Elizabethan and Jacobean poetry and prose, popular culture  
C. Burnham – modernism, theory, visual culture, and popular culture  
D. Chariandy – post-colonial literature and theory, Canadian studies, diasporic theory  
R.M. Coe – rhetorical theory and history, contrastive rhetoric; composition theory and pedagogy; literacy; discourse analysis (including 'public doublespeak' and 'plain language'); genre theory, rhetorical approaches to literary criticism, drama  
D. Coley – late medieval literature and culture, Chaucer, middle English, alliterative poetry, speech act theories  
C. Colligan – 19th century English literature and culture, obscenity, British Imperialism  
S. Collis – American literature, Modernism, contemporary poetry and poetics  
P. Cramer – media studies, discourse analysis, rhetoric, critical theory, argumentation, automatic text analysis  
L. Davis – Romantic literature, Scottish and Irish literature 1700-1850, literature and nationalism, feminist critiques of Romanticism, 18th century folk music and print culture  
J. Derksen – contemporary poetry and poetics, globalization, urbanism, critical methodologies  
P. Dickinson – modern drama and performance studies, film studies, comparative Canadian literatures, queer theory and gender studies

M. Everton – colonial, early American and transatlantic print culture, history of the book, authorship  
J.D. Fleming – Renaissance, hermeneutics, epistemology  
C. Gerson – Canadian literature and literary history, women and literature, print culture in Canada  
M.A. Gillies – 19th and 20th century British literature  
T. Grieve – modernism (poetry and fiction), twentieth century literature, nineteenth century poetry; the essay; history and theory of rhetoric; composition  
A. Higgins – Medieval and Renaissance drama, Shakespeare, Middle English literature  
M. Hussey – Medieval literature and culture including Old English and Latin literary tradition, bilingual aesthetics, intellectual history, the relationship between material and literary artifacts  
C. Kim – Asian North American literature and theory, Canadian literature, diasporic and postcolonial literatures and theory, women's writing and feminist theory, print cultures and history of the book  
C. Lesjak – Victorian literature and culture, feminist and Marxist theory, theory of the novel  
M. Levy – romantic literature, women writers, domesticity and the family, law and literature, literature and the environment  
M. Linley – Victorian poetry and prose; 19th century women poets, literature and visual representation  
S. McCall – contemporary Canadian literature, First Nations studies, post-colonial studies  
D.H. Reder – indigenous literatures in Canada, indigenous literary theories and epistemologies, and autobiography theory  
P.M. St. Pierre – Commonwealth literature, Canadian literature  
E.A. Schellenberg – Restoration, 18th century literature, 18th century women writers, print culture  
J. Smith – 20th century US literature, US southern studies, cultural studies, post-colonial theory  
D. Solomon – 18th century literature, restoration drama and print culture  
T. Werth – Tudor literature and culture, romance, religious polemic  
S. Zwagerman – rhetoric and writing, speech act theories, gender and discourse, American literature

## Admission Requirements

In addition to requirements in the *Graduate General Regulations* (page 219), the department requires evidence of academic writing ability in the form of at least two substantial literary essays which are scholarly in format and approach. The papers may be undergraduate essays previously prepared, or ones specially written for this purpose. Applicants to the master of arts for teachers of English (MATE) are not required to submit a writing sample.

## MA Program

This program develops scholars with a critical and comprehensive awareness of English studies. While offering specialization in one of various areas of strength in the department, the program requires a breadth requirement through course work and thereby grounds students' interests in a wide and flexible understanding of English studies. Students without a strong English background may be required to strengthen their preparation before admission. As well, all MA students complete ENGL 880 and 881, the graduate professional development seminars.

The program may be completed in one of two ways as shown below.

### Option A

This option consists of six courses including ENGL 880, 881 and a pre-twentieth century literature course. In addition, students write a thesis of about 100 pages and defend it in an oral examination.



### Option B

This option consists of eight courses including ENGL 880, 881, a pre-twentieth century literature course, and one other pre-nineteenth century literature course. In addition, students undertake an MA final research paper.

Full-time students typically enrol in two regular courses per term in addition to one of the required professional development seminars. The MA program is completed in three terms. For further departmental requirements, consult the departmental handbook.

The department recognizes the special needs of working people who wish to improve their qualifications. Some graduate courses are regularly offered in the evening.

### Examinations

While the general regulations set the minimum CGPA necessary for continuance at 3.0, the department regards grades below B to be unsatisfactory and expects students to achieve above the minimum. If progress is unsatisfactory, withdrawal under "1.8.2 Review of Unsatisfactory Progress" on page 223 of the *Graduate General Regulations* may be required.

Option A students complete four courses, two professional development seminars, write a thesis of about 100 pages and defend it in an oral examination. Thesis option students submit a thesis proposal and are examined by the supervisory committee no later than one term following course work completion. Students proceed with the thesis only after approval of the supervisory committee and the graduate program committee.

Option B students (including MATE students) choose a paper or project from one of their six courses. The paper or project, which is revised and expanded for publication, is examined by two faculty who, together, assign a grade of pass with distinction/pass/fail. The paper or project is completed and submitted for evaluation no later than the end of the term following course work completion. A student who fails may be permitted a second and final attempt. For further information, see "1.1 Degrees Offered" on page 219.

### Specialization in Print Culture 1700-1900

The MA program also permits interdisciplinary specialization in the politics of print culture (1700-1900), focusing on the changing role of printed texts in an emerging commercial society.

### Master of Arts for Teachers of English (MATE)

This cohort program for English teachers in the secondary and elementary school and collegiate system, offers an accessible two year advanced degree in English studies which recognizes the particular needs of teachers for a review of new critical approaches in the field, and for scheduling adapted to the demands of employment.

The MATE cohort program consists of eight courses and an MA final paper or project. Two of these are required cohort courses, ENGL 831 and 834, which are taught as Shakespeare and twentieth century literature courses; and two are required professional development seminars, ENGL 880 and 881, which are taught as MATE cohort courses, focusing on recent critical approaches to literary study and on advanced research methods, respectively.

For information, see *Examinations* above.

### Interdisciplinary Studies

In addition to the MA programs described here, which accommodate and encourage interdisciplinary study, the University offers degree programs to exceptionally

able applicants whose proposed studies cannot be carried out in any existing program. Students interested in pursuing an MA may wish to submit a proposal for special arrangements through the Office of the Dean of Graduate Studies. See "1.3.4 Admission to a Doctoral Program" on page 220.

### Joint Master's in English and French Literatures

This program allows students who have already been trained in both literatures to continue studies beyond the undergraduate level. See "Joint Master in English and French Literatures" on page 258.

### PhD Program

Applicants will have a well planned project that integrates with the department's areas of expertise. Cross disciplinary proposals and innovative studies are encouraged. Students are expected to contribute at all stages of the program.

The department's major areas include English literature, language, and print culture. Library resources include the contemporary literature collection, the largest single collection of post-war experimental and avant-garde poetry in Canada; the Wordsworth collection, including one of the largest collections of Lake District writings; William Blake drawings, illuminations and engravings in facsimile. The library also has on-line scholarly databases and resources in all major areas of study and subscribes to a wide range of leading academic journals.

The program is normally completed within four years.

### Admission Requirements

Students must have an MA or equivalent with high standing from a recognized university and a solid grounding in English studies. To fill any academic gaps, extra undergraduate or graduate courses may be required. Before accepting a student into the program, the department will consider the proposed research in relation to faculty resources in the field.

To apply, transcripts of all previous post-secondary studies, three academic reference letters, two academic writing samples, and a one to two page doctoral project description are required. See "1.3 Admission" on page 219 for admission requirements.

### Application Deadline

February 1

### Residence Requirement

Six terms

### Program Requirements

The first two years involve course work, field examinations, and a thesis prospectus to provide necessary grounding before the thesis project. In the third year, students engage in dissertation research and writing. Upon admission, the graduate chair is the advisor until a senior supervisor and supervisory committee are confirmed. Each student is matched with a potential senior supervisor, normally upon admission, and the supervisory committee should be formed during the first year and no later than the beginning of the field exams. Student and senior supervisor are encouraged to meet early.

### Language Requirement

PhD students must demonstrate to the supervisory committee an acceptable reading ability in a language other than English. For information and regulations, see "Graduate General Regulations" on page 219.

The program's three stages include course work; field exams and thesis prospectus; thesis oral defence.

### Courses

By the third term's end, the student completes five regular courses, at least one of which must be outside the student's specialization area. ENGL 880/881 is also completed, which is the graduate professional development seminar. The senior supervisor, in consultation with the graduate program chair, advises the student about course choices.

### Field Exams and Thesis Prospectus

The field exam process begins at the start of the third doctoral term, normally in the first summer term, and must be completed by the end of the sixth term. There are two fields to be completed consecutively in the fourth and fifth terms. The thesis prospectus is written in the sixth term.

Field exams are a take-home essay, written within a week and graded pass/fail. In exceptional cases a distinction will be recognized. A field exam can be repeated not later than the following term. A second failure requires a review of the student's progress. Normally, those who fail two field exams must withdraw from the program. Once the field exams are complete, the student begins the thesis prospectus in preparation for writing the dissertation. See department handbook for examples of fields, the field schedule, and the thesis prospectus schedule ([www.sfu.ca/english/Gradwebpage/progdes.html](http://www.sfu.ca/english/Gradwebpage/progdes.html)).

### The Field Committees

The committee for the secondary field, which will be written first, consists of an advisor who is a field specialist and one knowledgeable faculty member. The primary field committee, which will be written second, consists of three faculty members: the primary field advisor (normally the dissertation supervisor) and two faculty members in the field.

### Secondary Field

The secondary field examination paper ensures a comprehensive expertise in an area of study distinct from, but providing a basis of, knowledge that is useful to the student's field of specialization. The department offers fields in three general areas (historical, geographical, and theoretical) and may consider other fields if faculty and library resources are sufficient and it is academically appropriate.

### Primary Field

The primary field exam ensures that students have a broad knowledge and understanding of the literature, historical contexts and critical history of the primary field of English studies that is germane to their dissertation area and in which they will be claiming expertise as university teachers and scholars.

### Thesis Prospectus

The thesis prospectus guides students toward defining a thesis topic and is undertaken normally in the sixth term following the completion of the second field exam. The supervisory committee for the thesis prospectus will be the dissertation committee that was formed for the primary field.

### Thesis

After the completion of the thesis prospectus, the candidate will write a scholarly thesis normally consisting of between 200 and 250 pages (not including bibliography).

From the supervisory committee's appointment, the student and senior supervisor meet at least three times a term through the field exam period, thesis prospectus term, and thesis research/ writing period.

The completed thesis is defended in an oral exam. The (defence) examining committee consists of a chair (normally the graduate program chair), members of the supervisory committee (senior supervisor and at least one other department member), a faculty member external to the department, and an external examiner who is not a member of Simon Fraser University.

# Department of French

2630 Diamond Building, 778.782.4740 Tel,  
778.782.5932 Fax, www.sfu.ca/french

## Chair

R. Canac-Marquis BA, MA (UQAM), PhD (Mass)

## Graduate Program Co-chairs

L. Frappier BA, MA, PhD (Montr)  
C. Guilbault BA, MA (Laval), PhD (Alta)

## Faculty and Areas of Research

See "Department of French" on page 111 for a complete list of faculty.

C. Black – applied linguistics, second language pedagogy

J. Calderón – 20th century and contemporary literature, cultural studies, literary theory

R. Canac-Marquis – transformational syntax, morpho-syntax, formal semantics, anaphora, second language acquisition

R. Davison\* – 18th century French literature, correspondence and pedagogy, women writers, émigré writers

L. Frappier – French Renaissance literature, French humanist tragedy, royal entries, Québécois theatre

M.C. Fauquenoy\* – French linguistics, sociolinguistics, Creole French dialects

C. Guilbault – experimental phonetics, applied linguistics, dialectology, speech perception

G. Merler\* – modern French and Quebec literatures, methods of discourse analysis, Stendhal, individual psychology and literary analysis, poetry

G. Planchenault – second language acquisition, didactics of French, intercultural pragmatics, sociolinguistic competence, French cinema

S. Steele – exile studies, French war writing, Medievalism in the Third Republic (secondary interest in Chrétien de Troyes), literary correspondence

(French/English), poetry in surrealism and its vicinity

C. Vigouroux – sociolinguistics, ethnography, migration, francophonie, language and globalisation, Africa

J. Viswanathan\* – modern French and French Canadian novel, narrative theory, film and fiction

P.M. Wrenn\* – text linguistics, experimental phonetics, Canadian French, phonostylistics, phonology

\*emeritus

The department offers graduate research leading to an MA, with a concentration in either French linguistics or literature. Students interested in French as a second language (FSL) should contact the graduate chair. (The FSL option will interest those contemplating a career in the teaching of French.) Students seeking PhD admission may apply under special arrangements provisions of graduate general regulation 1.3.4.

## Areas of Study

The major areas of study are as follows.

### Linguistics

Linguistic analysis of French (sound system, morphology, syntax, lexicon), varieties of French (social, regional and stylistic variations), French Creoles, French linguistic theories, French applied linguistics, theoretical approaches to the acquisition of French as a second language. A variety of practical applications of linguistic theory may be envisaged: pedagogy, translation, stylistic analysis.

### Literature

Periods and genres: French Medieval literature, travel accounts, 18th century literature, poetry and novel of the 19th century, 20th century fiction, poetry and drama, Québécois literature. Critical approaches: literature and society, women writers, history of literature, cultural studies, discourse analysis,

interdisciplinary approaches to literature, teaching of literature.

## MA Program

### Admission Requirements

Candidates must satisfy the general admission requirements as shown in "1.3.2 Admission to a Graduate Diploma Program" on page 219 and "1.3.8 Conditional Admission" on page 220 of the *Graduate General Regulations*. Program admission requires a sound background in French literature or French linguistics, as well as a good command of both oral and written French. Candidates lacking these must remedy the deficiency before admission is granted through satisfactory completion of one or two terms as a qualifying student (see "1.3.5 Admission Under Special Arrangements" on page 220).

Upon admission, each student will be assigned a temporary supervisor.

The program's degree requirements may be completed 'with thesis,' 'with project' or 'without thesis.' In each case, the student works under a supervisory committee's direction (see "1.6 Supervision" on page 222) that has been appointed by the end of the second term.

Initially, students are admitted to the MA without thesis option. Transfer to the MA with thesis or MA with project option may be permitted after completion of the second term on supervisory committee recommendation, and subject to graduate studies committee approval. Required course work, thesis topic, project topic or area of field examination and other requirements are approved by the supervisory committee and graduate studies committee.

### Degree Requirements

Students may be required to complete additional courses to remedy deficiencies or to ensure suitable thesis preparation or project research. The following are the minimum requirements.

#### MA with Thesis

Students in the MA with thesis option successfully complete 15 units of graduate courses from their chosen concentration, either in linguistics or literature. Within the 15 units, with senior supervisor approval, students may complete up to five units outside the department. In addition, students complete a thesis of about 100 pages that is defended at an oral exam as described in 1.9 and 1.10 of the *Graduate General Regulations*. Students submit a written thesis proposal no later than one term following the completion of course work. Substantive thesis work may proceed only after approval of the thesis proposal by the supervisory committee and the graduate studies committee.

#### MA with Project

This option requires a minimum of 20 graduate units, 15 of which are completed within the department. With senior supervisor approval, up to five units may be from outside the department. Also, students complete a project that contributes to French linguistics, French/ Francophone literature or FSL pedagogy which is submitted for oral examination. The project may have a practical component in a non-traditional format. A written proposal is submitted no later than one term after course work completion. Substantive project work may proceed only after project proposal approval by the supervisory committee and the graduate studies committee.

#### MA without Thesis

Students selecting this option are required to complete a minimum of 30 graduate work units. With the senior supervisor's approval, up to 10 units may be completed by completing courses outside the department. In addition, students must complete a

field examination based on three completed courses. Field examination preparation will be undertaken on the supervisory committee's advice.

### Language Requirement

Students must demonstrate to the graduate program committee an acceptable competence in written and oral French and must show at least a reading knowledge of one language other than English or French that is acceptable to the supervisory committee. This requirement is fulfilled by completing two courses in that language or by passing an exam of translation of a 250 word text into English.

## Graduate Courses

### Core Courses

Course selection must be made in consultation with the student's senior supervisor.

#### Linguistics and Literature

FREN 803-5 Research Methods in French Linguistics and/or French Literature

#### Linguistics

FREN 804-5 Topics in the Structure of French I  
FREN 805-5 Topics in the Structure of French II  
FREN 806-5 Topics in the Acquisition of French  
FREN 810-5 Pragmatics and the Structure of French  
FREN 811-5 Topics in the Varieties of French  
FREN 812-5 Approaches to the Linguistic Analysis of French

FREN 816-5 Sociolinguistic Approaches to French Studies

#### Literature

FREN 820-5 Types of Discourse  
FREN 821-5 Theories and Methods of Literary Analysis  
FREN 822-5 Socio-cultural Approaches to French Literature  
FREN 823-5 Interdisciplinary Approaches to French Literature  
FREN 824-5 Topics in French Canadian Literature  
FREN 825-5 Topics in French Literature  
FREN 826-5 Monographic Studies

## Joint Master in English and French Literatures

Students already trained in both literatures may continue studies beyond the undergraduate level in this joint program. Students enrol in and, if successful, receive a degree from one of two departments known as the home department. The other is designated the associate department.

### Application for Admission

Students may apply to either department or to both, indicating a preference. Both departments must agree on the student's admission or on conditions for admission. A home department will be assigned in consultation with the student and with the agreement of both departments. A minimum of 15 upper division undergraduate units in each discipline is required for admission. The student, after admission and two terms of course work, will have the option of completing an MA either with thesis or without, subject to agreement of both departments.

### Supervision

The home department selects a joint supervisory committee of two faculty from the home department and one from the associate department.

### Home Department Requirements

If English is the home department, students must complete both of  
ENGL 880-4 Pro-seminar I  
ENGL 881-4 Pro-seminar II

See the Department of English about requirements.

## Concentration Requirements

In addition to department requirements, students also complete either the MA with thesis or without thesis.

### MA with Thesis

For this option, students successfully complete another 20 units from Departments of French and English literature courses, including at least one from each department (one course from one department and three from the other, or two from each department). Students also complete a thesis of about 100 pages on a topic acceptable to the supervisory committee, and it is defended at an oral examination as described in "1.9 Preparation for Examinations" on page 224 and "1.10 Examinations" on page 225.

### MA without Thesis

Students successfully complete another 30 units selected from Departments of French and English literature courses, including at least two courses from each department (two from one department and four from the other, or three from each department) and a written field exam based on three completed courses. Field exam preparation is on the advice of the supervisory committee.

## Department of Gerontology

2800 Simon Fraser University Vancouver, 515 West Hastings Street, Vancouver, BC, V6B 5K3,  
778.782.5065 Tel, 778.782.5066 Fax, gero@sfu.ca,  
www.sfu.ca/gerontology/

### Chair

A.V. Wister HBA, MA, PhD (WOnt)

### Graduate Program Chair

H. Chaudhury BA (B'desh Engin), MSC Architecture (Tex), PhD (Wisc)

### Faculty and Areas of Research

See "Department of Gerontology" on page 114 for a complete list of faculty.

H. Chaudhury – design for dementia, place-based reminiscence, long term care and self in dementia  
G.M. Gutman – seniors' housing, long term care, dementia, health promotion/population health and aging, program evaluation  
L. Lovegreen – built environment and aging, coping and stress in late life, health promotion, older adult education  
B. Mitchell\* – families and aging, intergenerational relations, youth transitions, quantitative methods, health promotion and social policy  
N. O'Rourke – geriatric depression, personality and mental health, test construction/validation, caregiving  
A. Sixsmith – technology for independent living, quality of life and health and their determinants, service provision for older people  
A.V. Wister – social demography, healthy lifestyles, environment and aging, program evaluation, design and statistical methods

\*joint appointment with sociology and anthropology

### Advisor

Ms. A. Barrett BA (C'dia), 2800 Simon Fraser University Vancouver, 778.782.5065

A master of arts degree with two concentrations is offered: environment and aging; health and aging. The program prepares students for professional roles with high level current knowledge, and substantial competence in research tasks necessary to undertake those roles. It also provides focused, interdisciplinary training for individuals in occupations offering services to older adults. Students will develop an appreciation of the complex ethical issues that are faced by persons working with older adults.

Each concentration covers specific problems and issues. The environment and aging concentration teaches planning, design, research and evaluation of working, living and recreational environments for older persons including families and community environments. Students will have backgrounds in architecture, interior design, urban and regional planning, social/human ecology, kinesiology, recreation and leisure studies, occupational therapy, physiotherapy, human factors, human geography, sociology or environmental or social psychology.

The health and aging concentration provides knowledge applied to research, evaluation and critical analysis of health care systems and specific health promotion strategies. Students with degrees in psychology, sociology, demography, health sciences, medical geography, social work, nursing, health education, physiotherapy, physical education or kinesiology would be probable candidates.

Students complete a core methods course and electives selected from the two concentrations. The program builds upon the expertise, research activities, clinical experience, and international reputation of the associated Gerontology Research Centre.

## MA Program

### Admission Requirements

Applicants should consult the department's website for application information, or contact the advisor.

Candidates who have not completed the post baccalaureate diploma in gerontology or have a minimum of five upper division courses with substantial aging content may be advised to complete courses from the diploma program prior to applying.

fall admission applications should be completed by January 30 of that year and applications for spring admission by September 30 of the previous year.

The following prerequisites, or their equivalent, are required for each concentration.

### Environment and Aging

GERO 401-3 Environment and Aging

### Health and Aging

one of  
GERO 302-3 Health Promotion and Aging  
GERO 404-3 Health and Illness in Later Life  
GERO 407-3 Nutrition and Aging

### Both or No Concentrations

three of  
GERO 300-3 Introduction to Gerontology\*  
GERO 400-4 Seminar in Applied Gerontology\*  
GERO 409-3 Mental Health and Aging  
GERO 420-4 Sociology of Aging  
KIN 461-3 Physiological Aspects of Aging  
PSYC 357-3 Psychology of Adulthood and Aging

\*recommended

Students also complete at least one undergraduate methods course. Under special circumstances, the five prerequisite course requirement may be waived.

## Curriculum and Description

There are four program components: a core methods course; electives; thesis or project; and internship. Students complete six courses (one core, and five electives chosen from the two concentrations) and complete a thesis or project. Students who complete a thesis in lieu of the project will complete one less elective course. (See *Thesis or Project Option* below).

### Core Methods Course

Completion of one core methods course is required.

GERO 803-4 Analytical Techniques for Gerontological Research

## Elective Courses from Areas of Concentration

Students select remaining courses from the concentration courses, other electives, or from outside the program if approved by the student's senior supervisor, and may build a concentration in environment and aging or health and aging. A concentration is considered to be at least two courses in one of the two areas.

### Environment and Aging

GERO 810-4 Community Based Housing for Older People  
GERO 811-4 Institutional Living Environments  
GERO 822-4 Families, Communities and Health\*\*  
GERO 830-4 Human Factors, Technology and Safety

### Health and Aging

GERO 801-4 Health Policy and Applied Issues in Gerontology  
GERO 802-4 Development and Evaluation of Health Promotion Programs for the Elderly  
GERO 820-4 Principles and Practices of Health Promotion  
GERO 823-4 Mental Health and Illness in Later Life  
GERO 840-4 Special Topics in Gerontology\*\*\*  
GERO 889-4 Directed Studies\*\*\*

### Electives Outside of Concentration

GERO 804-4 Advanced Qualitative Methods in Gerontology  
GERO 805-4 Advanced Statistics for Behavioral Analysis in Gerontology  
GERO 806-4 Interdisciplinary Theories in Gerontology

\*\*may be used for either concentration

\*\*\*may be used for either concentration depending on the topic

## Project or Thesis Option

Students present a written thesis/project proposal to their supervisory committee. Project examples include: program evaluation for older adults; design and implementation of environments or services for elderly persons; and analyses of secondary data. A project will be evaluated by the supervisory committee and a qualified external reader. The project requirement must meet the guidelines set out in the "Graduate General Regulations" on page 219.

Students preparing for advanced graduate training may be permitted to select a thesis option and will complete one less elective course. The thesis provides high quality focused research. Original and innovative research is encouraged to meet this requirement. Committee selection and thesis proposal approval will follow the same steps as the project. The thesis requirement must meet the "Graduate General Regulations" on page 219.

## Internship

Students lacking relevant work experience will supplement their program with an internship by working for an agency or organization in a position of responsibility for a maximum of one term.

## PhD Program

### Admission Requirements

Admission will require a gerontology master's degree or a master's degree from another discipline in which a significant amount of course work and/or thesis/project research deals with aging or the aged. Applicants will be evaluated on an individual basis. Those not meeting these requirements will need to complete preparatory course work that is equivalent to a master's in gerontology or aging studies. It is recommended that applicants have a minimum 3.5 grade point average. In addition, there must be

supervisory capacity in the department to support the candidate's dissertation research.

In addition to program requirements, applicants meet University admission requirements to a doctoral program (see "1.3.4 Admission to a Doctoral Program" on page 220).

### Supervisory Committee

A senior supervisor is assigned to each student upon doctoral program admission. Two additional departmental committee members and one external department member will be added by the end of the first year. At least two supervisory committee members must be department members.

### Degree Requirements

Doctoral students complete five GERO graduate courses but may be required to complete up to seven additional courses if deemed necessary by the admissions committee. Two courses will be related to one of two streams that the student has selected as an area of expertise: environment and aging; or health and aging. Two courses will be methods/statistics courses, and one course will be a required theory course. (See "Gerontology GERO" on page 388 for course descriptions.)

After completion of course work, students will write two comprehensive examinations, and will also write and defend a dissertation.

### Course Requirements

#### Streams

##### *Environment and Aging Stream*

GERO 810-4 Community Based Housing for Older People  
GERO 811-4 Institutional Living Environments  
GERO 822-4 Families, Communities and Health  
GERO 830-4 Human Factors, Technology, and Safety

##### *Health and Aging Stream*

GERO 801-4 Health Policy and Applied Issues in Gerontology  
GERO 820-4 Principles and Practices of Health Promotion  
GERO 822-4 Families, Communities and Health  
GERO 823-4 Mental Health and Illness in Later Life

### Required Methods/Statistics Courses

Student complete any two\* of  
GERO 802-4 Development and Evaluation of Health Promotion Programs for the Elderly  
GERO 803-4 Analytical Techniques for Gerontological Research\*  
GERO 804-4 Advanced Qualitative Methods in Gerontology  
GERO 805-4 Advanced Statistics for Behavioral Analysis in Gerontology

\*or equivalent courses

### Required Theory Course

GERO 806-4 Interdisciplinary Theories in Gerontology

**Note:** Students may substitute up to three courses from other programs (especially the Faculty of Health Sciences) with departmental approval. Students may also complete one directed studies (GERO 899).

### Comprehensive Examinations

After completion of all course work, students write two comprehensive exams based on reading lists developed with their supervisory committee. These will be defended orally.

One comprehensive exam will cover methods and statistics, and the second will cover the substantive literature in the dissertation field. Material covered in the comprehensive exams will be determined by the student's supervisory committee.

A student who fails a comprehensive exam will have one additional chance for re-examination. Students failing either comprehensive exam more than once will not be allowed to continue in the program.

### Dissertation

Students write and successfully defend a dissertation prospectus in accordance with the *Graduate General Regulations* (see "1.9.4 Preparation for Examination of Doctoral Thesis" on page 224 and "1.10.1 Thesis Examination" on page 225).

## Department of History

6022 Academic Quadrangle, 778.782.4467 Tel, 778.782.5837 Fax, [www.sfu.ca/history](http://www.sfu.ca/history)

#### Chair

M. Leier BA, MA (S Fraser), PhD (Nfld)

#### Graduate Program Chair

E. Chenier BA (York, Can), MA, PhD (Qu)

#### Faculty and Areas of Research

See "Department of History" on page 115 for a complete list of faculty.

F. Becker – East Africa, Muslim Africa  
J. Brown – modern Chinese history  
E. Chenier – Canada  
L. Clossey – wider world  
L. Cormack – history of science and technology; early modern England  
J.S. Craig – early modern England  
A.S. Dawson – Latin America  
A. Ede – history of science and technology  
K. Ferguson – 20th century United States  
P. Garfinkel – modern Italy  
A. Geiger – immigration, North American West  
A. Gerolymatos – Greece and Balkans  
M.E. Kelm – Canada/First Nations  
N. Kenny – French Canada, urban space  
W. Keough – Atlantic Canada  
D. Krallis – Byzantine  
T. Kuehn – Middle East  
M. Leier – Canada, labor  
J.I. Little – Canada, French Canada  
D.N. MacLean – Middle East, Islam, India  
J. Matsumura – East Asia  
E. O'Brien – Renaissance  
H. Pabel – early modern Europe  
R. Panchasi – modern France  
N. Roth – modern Germany  
A. Seager – Canada, labor  
P. Sedra – Middle East  
J. Spear – 18th century US, race  
J.O. Stubbs – modern Britain  
J. Taylor – North American, environmental history  
I. Vinkovetsky – Russia

### Areas of Study

The Department of History offers graduate research leading to an MA and PhD. The major study areas are Canada, Europe, colonialism and imperialism, the Middle East, the Americas, and Africa. Only those who wish to specialize in one of the specific fields covered by the list of MA courses in the case of MA applicants, or PhD areas of specialization in the case of PhD applicants, will be considered. The department reserves the right to accept candidates only when a qualified supervisor is available and the University resources (including library facilities) are deemed adequate for the stated research priority.

### Admission Requirements

Admission will be in the fall term only, and should be completed by February 1. Applicants must submit a sample of their written work.

### Seminar Courses

HIST 814 is a compulsory MA seminar offered each fall term. HIST 806 and 810 are also offered as seminars each year. At least two other seminars will normally be offered, the choice depending on the research interests of the majority of the students.

## MA Program

### Conditions of Admission

MA candidates must satisfy the minimum University entrance requirements: at least a 3.0 average or its equivalent. In addition, the department requires a 3.33 (B+) average in history courses completed during the last two undergraduate years. A degree in a discipline related to history may be accepted in some cases.

### Programs of Study

In most circumstances, students will complete course work in 12 months. In the fall term, HIST 814 and one optional course is completed. In the spring term, students complete HIST 815 and two optional courses. Of the three optional courses, at least one must be from area two (regional courses) and one from area three (thematic/comparative courses), and students are expected to enrol in at least two seminars. For a list of area one, two, three and four courses, visit [www.sfu.ca/history/graduate.htm](http://www.sfu.ca/history/graduate.htm)

The prospectus workshop helps students prepare to research and write their theses. Students receive a satisfactory or unsatisfactory grade for this course. At the conclusion of the workshop, students defend their prospectuses to their committees in a formal setting.

During the third term, students research and write their theses.

Upon graduate program admission, students are assigned a provisional supervisor. See "1.6.4 Supervisory Committee" on page 222 for supervisory committee information. Students and supervisors should consult with each other in the first term about the composition of the supervisory committee, which consists of the supervisor and usually one other member of the history department. The supervisory committee should be formalized as soon as possible after the student's entry into the program.

Students with significant financial support from awards or teaching assistantships are expected to enrol in a full course load. Those with no such financial aid may enrol in a lesser course load.

### Degree Requirements

Students complete 25 units including HIST 814 and 826 (five courses), defend their thesis prospectus, and write a thesis of between 15,000 and 21,000 words, including footnotes (excluding bibliography). Shorter or longer theses may be submitted only with the graduate chair's prior approval. If a thesis will exceed the word limit, the graduate chair must give formal approval prior to scheduling the defence.

Students enrolled in HIST 898 (thesis) will participate in the monthly candidate seminars conducted by the graduate chair. Students are required to present portions of their own work at least once per term.

### Language Requirements

Students must demonstrate a reading ability in a language other than English that is acceptable to the supervisory committee. Students proposing to study Canadian history must demonstrate an ability to read French. Ability is determined by a time limited examination consisting of the translation of a passage of history in the particular language. A dictionary is permitted. The Department of French offers courses to help students meet the language requirements.

## PhD Program

### General

Prospective PhD candidates are advised that the degree is granted in recognition of the student's general grasp of the subject matter of a broad area of study; for the ability to think critically; and for the power to analyze and co-ordinate problems and data from allied fields of study.

All doctoral students are expected to complete at least one graduate seminar course for credit in their first year.

A student ordinarily is admitted to the PhD program after completion of an MA or its equivalent. BA applicants applying directly to the PhD program must have at least a 3.5 GPA or its equivalent. Candidates for the MA may, under exceptional circumstances, be admitted to the PhD program without completing the MA requirements if they have 20 units of course work. Admission from the MA program is contingent upon a distinguished level of performance, recommendation of directing faculty, scholarly potential, and available department resources.

### Programs of Study

Upon program admission, each student is assigned a faculty supervisor. See "1.6 Supervision" on page 222 for information on supervisory committees. The supervisory committee and the student determine three fields of study, at least two of which are chosen from the list below. A third field may be chosen within or outside the Department of History with permission of the graduate studies committee.

The student and each field supervisor will agree as soon as possible on a general readings list of approximately 45 books (or equivalent) in each field. Reading list copies must be submitted to the graduate program committee chair by the beginning of the second term. The graduate program committee approves these lists and places them in the student's files. Students are expected to cover the material on these lists, preferably by means of a structured reading and writing program with their supervisors.

The comprehensive examinations, based on reading lists, are offered twice a year in the first half of the fall and spring terms. Written exams are administered in weeks five and six. Oral exams are scheduled in weeks six through seven of the same term. Students who miss the first exams in their fourth term due to extenuating circumstances must complete them the following term. For details about the comprehensive exams, see the department's graduate brochure. All written examinations must be passed before the oral comprehensive exam. A student who fails one of the written examinations, and one only, will have one additional chance for re-examination before sitting the oral exam. A 'fail,' 'pass,' or 'pass with distinction' will be assigned by the examining committee after oral exam completion. Students failing at this stage are not permitted to continue in the program.

### PhD Fields

Canadian social and cultural history  
Canadian political and economic history  
Early modern European history  
European social history  
European cultural history  
European intellectual history  
European international relations since the early 19th century  
gender and history  
rural history  
mediaeval Europe  
France since 1789  
Germany since the 18th century  
Russia since Peter the Great  
the British Isles since 1485

Great Britain as a great power since 1763  
state and society in the nineteenth century Ottoman empire  
state and society in the twentieth century Middle East  
the Middle East in the international system  
the geopolitics of the Indian empire  
Islamic India  
sub-Saharan Africa since 1800  
European settlement in Africa  
United States to 1890  
United States since 1890  
United States cultural history 1830-1890  
colonial Latin America  
Latin America since Independence

### Thesis

Within one term of successful completion of comprehensive exams and formal candidacy admission, students submit a thesis prospectus on a topic selected from the specialization areas listed above. The same procedure is followed for MA candidates but the thesis committee may seek the participation of another who has particular expertise in the proposed thesis topic area. Through the thesis, the student must demonstrate an original contribution to knowledge. When the thesis is complete and the student is ready to offer himself/herself for the degree, a thesis examining committee will be formed, composed of the departmental graduate program committee chair or designate; the student's supervisory committee; a faculty member or a person otherwise suitably qualified who is not a supervisory committee member; and an external examiner who is not a University employee. This committee examines the student on the thesis and in the student's major field of study. See "Graduate General Regulations" on page 219 for further information and regulations.

### Language Requirements

Students must demonstrate a reading ability in one language other than English that is acceptable to the supervisory committee. Students proposing to study Canadian history must demonstrate a reading ability in French, determined by a time limited examination consisting of the translation of a history passage in the particular language. A dictionary will be permitted. The Department of French offers courses to help graduate students meet this requirements.

## School for International Studies

7200 Simon Fraser University Vancouver, 515 West Hastings Street, Vancouver, BC, V6B 5K3,  
778.782.7148 Tel, 778.782.7837 Fax

6203 Academic Quadrangle (Burnaby campus),  
778.782.7345 Tel, 778.782.7837 Fax

www.sfu.ca/international studies, intst@sfu.ca

#### Director

J. Harriss BA, MA (Camb), PhD (E Anglia)

#### Graduate Program Chair

N. Jackson BA (Tor), MSc, PhD (LSE)

#### Faculty and Areas of Research

See "School for International Studies" on page 120 for a complete list of faculty.

J.T. Checkel – international relations: civil war, international institutions, constructivism, transnational politics; human rights; European integration: socialization dynamics, identity; qualitative methods  
A. Gerolymatos – history of diplomacy; the organization and uses of intelligence and international security in Greece and West Asia\*

J. Harriss – political economy of development, South Asia

M.C. Howard – social/cultural anthropology;  
Southeast Asia development  
N. Jackson – new security studies, foreign policy analysis, central Asia and Russia  
T. Moustafa – comparative law and courts, religion and politics, state-society relations, the Middle East  
L. Nettelbladt – transitional justice, human rights, forced migration, democratic transitions, and international intervention, southeastern Europe inside of Balkans  
A. Pereira – global economic development  
globalization, world income inequality  
P.V. Warwick – comparative politics\*\*\*

#### Advisor

Ms. J. Bérubé BA (S Fraser), 778.782.7906 Tel,  
778.782.7837 Fax, jberubea@sfu.ca

\*joint appointment with history

\*\*joint appointment with political science

## MA Program

This full-time 12 month program, leading to a master of arts in international studies, consists of seven courses that are completed over three consecutive terms. Courses will be dependent upon which course stream a student is completing. These are

- stream A – international development
- stream B – complex emergencies

### Admission Requirements

Applicants must have a bachelor's degree with a cumulative grade point average of at least 3.0 from a recognized university, normally in an arts or social sciences discipline. Those admitted with other credentials, or those with an arts degree who, in the judgement of the program director, are without adequate foundation in the social sciences, may be required to make up any deficiency without receiving graduate credit for those courses. Students are normally admitted to the fall term in September.

### Application Requirements

The following application documentation is required.

- A Simon Fraser University graduate application form.
- Official transcripts from all institutions that the student attended, showing all grades. Transcripts must be mailed directly from the granting institution to the School for International Studies.
- Three official confidential letters of reference, mailed directly from referees, at least two of which must be from faculty members. This requirement may be waived for mid-career applicants with significant professional experience, in which case employment referees may be used. Please consult the school when using employment referees.
- A one page letter of intent that explains the reason for pursuing the master of international studies program, and the desired stream of study.
- Students whose first language is not English and whose undergraduate degrees are from institutions where English is not the language of instruction are required to submit English language test scores as follows: IELTS (International English Language Testing System) with a minimum score of 7 on the academic modules; or TOEFL IBT (Test of English as a Foreign Language internet based test) with an overall score of 88 or better with a minimum score of 20 in each of the four components (listening, speaking, writing, reading); or TOEFL PBT (Test of English as a Foreign language paper based test) with a minimum score of 570 including a minimum essay score of 5; or TOEFL CBT (Test of English as a Foreign language computer based test) with a minimum score of 230 including a minimum essay score of 5.

## Program Requirements

MA candidates complete a minimum of 30 units, including at least 24 units of course work (six graduate courses in seminar format) and a project (six units). Courses will be dependent upon which stream a student is completing.

### Stream A International Development

Students who choose this stream complete all of IS 800-4 Problems in International Development Policy and Practice  
IS 801-4 Institutions, Policies and Development  
IS 802-4 Directed Readings A (or POL 844)  
IS 803-4 Economics of International Organizations and Development  
IS 809-4 Selected Topics – Economic and Social Development of Selected Regions\*  
IS 888-6 MA Project  
POL 830-5 Comparative Politics: Methods and Approaches\*

### Stream B Complex Emergencies

Students who choose this stream complete all of IS 800-4 Problems in International Development Policy and Practice  
IS 801-4 Institutions, Policies and Development  
IS 806-4 State Failure and Reconstruction: Comparative Perspectives  
IS 807-4 Complex Emergencies and Humanitarian Intervention  
IS 808-4 Directed Readings B (or POL 842)\*  
IS 888-6 MA Project  
POL 830-5 Comparative Politics: Methods and Approaches (or IS 804)\*

\*students may substitute courses selected from other graduate programs for up to two of the courses, determined by the student's stream; substitute courses must be approved by the program director who will look for coherence and consistency with the overall objectives of the selected stream.

### MA Project

A major project is required for either stream involving either two extended essays (each of not more than 8,000 words) based on core readings or, with the approval of the program director, a project.

It is expected that the project will have some international dimension and may take different forms (e.g. a CD with sound and video, or a web site). The student will also be expected to write a short text (15,000-20,000 words, or six or seven pages of normal type) explaining briefly the question or topic, and the methods that have been employed. If the project is the production of a text alone, a 12,000-15,000 word paper (40-50 pages of normal type) is required explaining the question or theme, its significance, and methodology.

## Latin American Studies Program

5053 Academic Quadrangle, 778.782.3518 Tel, 778.782.5799 Fax, [www.sfu.ca/las](http://www.sfu.ca/las)

### Director

E. Hershsberg BA (Indiana), MA, PhD (Wis)

### Graduate Program Director

E. Hershsberg BA (Indiana), MA, PhD (Wis)

### Faculty and Areas of Research

See "Latin American Studies Program" on page 122 for a complete list of faculty.

E. Hershsberg – democracy and development in Latin America, neoliberalism, state and society in conflict, social policy in the Andes, human rights abuses in the southern cone

A. Hira – industrial, technology and regulatory policies in Latin America and East Asia

G. Otero – states, nations and indigenous movements; sociology of agriculture and food; NAFTA region and Latin America  
H. Wittman – environmental sociology, social movements, food and society, qualitative methods, Brazil and Guatemala

### Associate Members

Y. Atasoy, Department of Sociology and Anthropology  
R.E. Boyer, emeritus professor  
J.A.C. Brohman, Department of Geography  
R.A. Clapp, Department of Geography  
K. Corbett, Faculty of Health Sciences  
A. Dawson, Department of History  
F. de Maio, Department of Sociology and Anthropology  
J. Garcia, emeritus professor  
R. Jamieson, Department of Archaeology  
R.C. Newton, emeritus professor  
S. Pigg, Department of Sociology and Anthropology  
J.M. Sosa, Department of Linguistics  
P. Wagner, emeritus professor  
H. Zaman, Department of Women's Studies

## Graduate Certificate in Latin American Studies

This program may be of interest to those seeking certification of Latin American expertise. For information, and to be admitted, students should contact the Latin American Studies Program director.

This graduate certificate program is exclusively, and only, completed during enrolment in a master's or doctoral program. Therefore, graduate certificate courses may be applied toward a master's or doctoral program. Students are not permitted to complete this graduate certificate program on its own. Courses used to satisfy the requirements of a diploma program cannot also be used to satisfy the requirements of this graduate certificate program.

### Program Requirements

Students complete, with a minimum B grade, both of LAS 815-4 Theories of Latin American Development  
LAS 835-4 Social and Political Change in Latin America

and either

LAS 800-4 Approaches to Research in Latin American Studies

or another graduate research methods course offered through another department

plus one additional Latin America related course

Students are also required to demonstrate Spanish or Portuguese language proficiency by taking a faculty administered exam, or obtaining a B grade in an upper division Spanish or Portuguese language course.

Courses used to fulfil the requirements cannot be graded as satisfactory/unsatisfactory but instead must culminate in a letter grade.

## MA Program

This program offers interdisciplinary study and research leading to a master of arts. The program explores the interrelationships between socioeconomic, political, cultural and historical forces in Latin American development processes. It places emphasis on contemporary Latin America and the region's evolving engagement with the international system, while recognizing the importance of understanding colonialism and nation-state origins. Although most will focus on the contemporary problems of Latin American development, the program welcomes students whose research interests encompass earlier historical periods.

## Admission Requirements

Admission is conducted annually. Applicants must satisfy the Latin American studies graduate program committee that they are well prepared academically to undertake Latin American studies graduate work. See "1.3 Admission" on page 219 for additional University requirements. As well as this, the program requires

- a sample of the candidate's scholarly work, preferably with a Latin American focus (i.e. an undergraduate paper previously submitted as part of a course requirement)
- a short statement of purpose detailing interests and goals in Latin American studies
- proof of reading and speaking competence in Spanish or Portuguese, equivalent to the successful completion of three college level courses (i.e., SPAN 102, 103, 201). At the discretion of the Latin American studies graduate program committee, proof of competence in another language of Latin America and the Caribbean may be accepted in exceptional circumstances.
- If applicable, a resume of previous relevant course work and/or employment will be considered. Background may include specialized training, exposure to interdisciplinary studies of Latin America, and/or first hand field experience.

MA program acceptance is conditional on the availability of a senior supervisor selected only from Latin American studies and/or associated faculty.

## Degree Requirements

Student must complete these minimum requirements.

- Six courses including LAS 800, 815 and 835. The other three courses can include LAS 851, a directed readings course that may be completed from courses designated as having Latin American studies content offered by other departments or universities. Credit for the latter courses is subject to supervisory committee approval. Students with deficiencies may have to complete more courses.
- Students are expected to secure approval of their thesis proposal from their senior supervisor before embarking on field research.
- Students complete a thesis, giving evidence of independent research and critical abilities, that is judged by the examining committee at an oral defence. The thesis may be in English or Spanish.

## Other Graduate Latin American Content Courses

The following may be acceptable for inclusion in the MA program. Permission may be required from the departments in which these courses are offered and some courses may require prerequisites.

GEOG 666-4 Geography, Development Theory and Latin America

HIST 845-5 Themes in Latin American History

In addition, more broadly listed courses may be acceptable if focused on Latin America, subject to the Latin American studies graduate program committee designation. Some appropriate courses follow.

CMNS 845-5 Communication and Development  
ECON 855-4 Theories of Economic Development  
GEOG 622-4 Theories and Practices of Development  
POL 839-5 Comparative Development  
SA 850-5 Advanced Sociological Theory  
SA 870-5 Advanced Anthropological Theory

## Special Arrangements

Students seeking admission to a Latin American studies doctoral program may apply under the special arrangements provisions of the *Graduate General Regulations* section. See "1.3.4 Admission to a Doctoral Program" on page 220.

# Liberal Studies Program

2400 Simon Fraser University Vancouver, 515 West Hastings Street, Vancouver, BC, V6B 5K3, 778.782.5152 Tel, 778.782.5159 Fax, [www.sfu.ca/gls](http://www.sfu.ca/gls), [gls@sfu.ca](mailto:gls@sfu.ca)

## Director

S. Duguid BA (III), MA, PhD (S Fraser)

## Graduate Program Chair

M. Kenny BA, MA (Virginia), DipSocAnthrop, DPhil (Oxf)

## Steering Committee

H. Bai, Faculty of Education  
S. Duguid, Department of Humanities  
A. Feenberg-Dibon, Department of Humanities  
M. Fellman, Department of History\*  
T. Grieve, Department of English  
J.D. Jones, School of Engineering  
M. Kenny, Department of Sociology and Anthropology  
J. Martin, Department of Psychology  
K. Mezei, Department of Humanities\*  
G. Poitras, Faculty of Business Administration  
P. Schouls, adjunct professor  
E. Stebner, Department of Humanities  
J. Sturrock, emeritus professor

\*emeritus

## Advisor

Ms. P. Graham BA, MA (S Fraser), 2403 Simon Fraser University Vancouver, 778.782.5152 Tel, [koczars@sfu.ca](mailto:koczars@sfu.ca)

This program, which leads to a master of arts, liberal studies, is for adults returning to part-time study. The program, which is affiliated with the Department of Humanities, is offered at Simon Fraser University Vancouver during evening and weekend hours.

In the best tradition of liberal education, the program addresses some of the great works of our intellectual and artistic heritage, studies the perennial concerns that have shaped our culture, and explores contemporary perspectives on traditional ideas and values. The interdisciplinary seminars offer wide reading, careful reflection, and intense discussion. They are taught by faculty who are chosen for their expertise and teaching excellence, and for their interest in interdisciplinary studies.

## Admission Requirements

Applicants must satisfy the liberal studies graduate program committee of academic suitability. In addition to the normal graduate admission requirements, applicants must demonstrate readiness through reference letters, written work samples, and normally an interview. Exceptionally, the graduate program committee may recommend admission to those who do not meet normal requirements but who, by reason of prior experience, strong credentials and demonstrated competence, are particularly suited.

## Degree Requirements

Students complete six seminar courses and choose one of the three options listed below.

- submit two extended essays for oral examination
- submit one project for oral examination
- complete two additional courses and write a field examination based on material covered in three completed courses.

Two of the six required core courses (LS 800 and 801) are normally completed in the first two terms. The remaining courses may be selected from those offered in the program. Students choosing the third option will complete eight courses.

Students may enrol in one or two courses per term. Exceptionally, and by agreement of the graduate

program committee and the department involved, a student may complete two graduate courses in other departments toward this degree.

Extended essays, developed from course work papers and may make significant use of non-written media, will also be developed from course work and is examined as specified in *Graduate General Regulations* "1.10.1 Thesis Examination" on page 225. One of the two additional courses (see above) must be LS 898 and the other may be any LS course other than LS 998 or 999. Field examination preparation is on the supervisory committee's advice.

The program emphasizes a community of inquiry and discussion over independent research and entails several special expectations within the graduate study general regulations. Newly admitted students must attend an introductory short course prior to the beginning of the first core course in the fall term.

Supervisory committees are arranged by the graduate program committee chair. With the dean of graduate studies' approval, the supervisory and exam process for the extended essays or project may be modified to emphasize collegial exchange.

Students should expect to participate in out-of-class activities, such as pre-class dinners, that encourage interchange and enhance intellectual community.

Because the program is designed for individuals having other obligations, and who may for that reason require greater or lesser amounts of time to complete the program, it has been approved for part-time study.

## Courses

LS courses are intensive seminars. Core courses LS 800 and 801 develop a common readings base. The other six seminar courses may vary in approach and content each time they are offered, and will address a central tension in our intellectual lives, trace some of its sources, and consider its impact on our experience of the present. All courses are cross-disciplinary and may draw on faculty from across the University.

# Department of Linguistics

9203 Robert C. Brown Hall, 778.782.4725 Tel, 778.782.5659 Fax, [www.ling.ca/linguistics](http://www.ling.ca/linguistics)

## Chair

T.A. Perry BA (Wabash), MA, PhD (Indiana)

## Graduate Program Chair

N. Hedberg BA, PhD (Minn)

## Faculty and Areas of Research

See "Department of Linguistics" on page 123 for a complete list of faculty.

J. Alderete – phonology, morphology, and their interaction, computational learning algorithms, optimality theory and Athapaskan linguistics  
E.J. Fee – first language acquisition, atypical language acquisition, clinical phonetics  
D.B. Gerdts – syntax  
C-H. Han – syntax, semantics, computational linguistics  
N. Hedberg – syntax, semantics, pragmatics, cognitive science  
T. Heift – computer assisted language learning, applied linguistics, and computational linguistics  
S.K. Hilgendorf – sociolinguistics, applied linguistics, foreign language pedagogy, second language acquisition  
P. McFetridge – computational linguistics  
Z. McRobbie – experimental phonetics, phonology, Finno-Ugric linguistics, sociolinguistics  
J.D. Mellow – second language acquisition and teaching, First Nations languages

M. Munro – applied linguistics, experimental phonetics, second language acquisition  
P. Pappas – modern Greek, medieval Greek, language variation and change, contact linguistics, Indo-European linguistics, Balkan linguistics  
F.J. Pelletier\* – formal semantics of natural language, philosophy of language and logic, computational semantics  
T.A. Perry – phonology, German linguistics, linguistic theory  
J.M. Sosa – Hispanic linguistics, dialectology, language methodology, Caribbean area sociolinguistics  
M. Taboada – discourse, pragmatics, computational linguistics, systemic functional linguistics  
Y. Wang – experimental phonetics, neurolinguistics, psycholinguistics, second language acquisition, cognitive science

## Adjunct Faculty

F.J. Newmeyer – syntactic theory, structure of English, history of linguistics  
K. Shahin – phonetics and phonology, phonological acquisition, First Nations languages, Arabic

## Associate Members

For areas of research, refer to the department listed.

M. Boelscher Ignace, First Nations Studies Program, Department of Sociology and Anthropology  
F. Popowich, School of Computing Science

\*emeritus

## Degrees Offered

The program offers graduate work leading to the degrees of MA and PhD in linguistics.

Applicants are considered by how their proposed programs of study coincide with the research and teaching interests of the department. Where a student's interests span more than one field of study, a program of course work and supervised research in more than one field may be arranged. Individual programs may also be set up in co-operation with other departments under the special arrangements provisions of "1.3.4 Admission to a Doctoral Program" on page 220 of the *Graduate General Regulations*.

## Time Limit

Although University regulations allow a five year time limit for MA degree completion and eight years for the PhD, (including the MA degree work), an MA student is normally expected to complete the degree in two years and a PhD student in three years after the MA. See "Graduate General Regulations" on page 219.

## MA Program

### Admission Requirements

Students must demonstrate adequate linguistics preparation. Those with little or no academic linguistics preparation may not obtain clear program admission or admission as a qualifying student. See "1.3.5 Admission Under Special Arrangements" on page 220 and "1.3.4 Admission to a Doctoral Program" on page 220 in the *Graduate General Regulations* for general admission requirements.

### Areas of Specialization

Linguistic theory, phonetics, phonology, morphology, syntax, semantics, discourse-pragmatics, computational linguistics, Amerindian linguistics, historical and comparative linguistics, linguistics history, sociolinguistics, second language learning.

### Credit and Research Requirements

#### Course Work

Students complete at least 20 units of graduate course work in Linguistics, including LING 800, 801 and 851.

## Thesis

All students must complete an MA thesis based on original research, and must comply with University regulations on completing and defending the thesis.

## Language Requirements

Candidates must show a high competence in at least one language other than English.

## PhD Program

### Admission Requirements

Students must demonstrate a substantial background in linguistics and research methodology. Direct PhD program admission without an MA in linguistics, or equivalent is normally not possible. For general admission requirements, see “1.3 Admission” on page 219 of the *Graduate General Regulations*.

### Areas of Specialization

Linguistic theory, phonetics, phonology, morphology, syntax, semantics, discourse-pragmatics, computational linguistics, Amerindian linguistics, historical and comparative linguistics, history of linguistics, sociolinguistics, second language learning.

### Credit and Research Requirements

These requirements are beyond those of the MA requirements. Students may need to complete specified courses from the MA program requirements as a condition of admission to the PhD program.

### Course Work

Students complete at least 16 linguistics units (four courses), approved by the supervisory committee. Only one course may be a directed research course.

### Thesis Proposal

Candidates submit a written thesis proposal to the supervisory committee which defines the intended original research and the relationship between it and existing scholarship. After submission, the student presents the proposal at a departmental colloquium no later than the end of the ninth residence term. The written proposal must be approved by the supervisory committee prior to the start of substantive research.

### PhD Thesis

The thesis is completed according to regulations.

### Language Requirements

Candidates must show high competence in two languages other than English, with some knowledge of the structure of at least one non-Indo-European language. The supervisory committee determines how to demonstrate this competence.

## Department of Philosophy

4604 Diamond Building, 778.782.3343 Tel, 778.782.4443 Fax, [www.sfu.ca/philosophy](http://www.sfu.ca/philosophy)

### Chair

L. Shapiro BA (Wesleyan), PhD (Pitts)

### Graduate Program Chair

M. Hahn BA (S Fraser), MA (Br Col), PhD (Calif)

### Faculty and Areas of Research

See “Department of Philosophy” on page 127 for a complete list of faculty.

K. Akins – philosophy of mind, philosophy of perception, philosophy of the cognitive sciences  
S. Black – social and political philosophy, ethics, history of 17th century philosophy  
M. Hahn – philosophy of mind, philosophy of language, history of early analytic and continental philosophy

P.P. Hanson – epistemology, philosophy of language, philosophy of science, philosophy of mathematics, philosophy of mind

P.T. Horban – philosophy of religion

R.E. Jennings – logic, philosophy of language, philosophy of mind

J.S. McIntosh – philosophy of mind, philosophy of science, metaphysics

M. McPherran – ancient greek philosophy, history of philosophy, philosophy of religion, ethics/history of ethics

L. Shapiro – history of modern philosophy, feminism, philosophy of mind, epistemology, philosophy of personal identity

E. Tiffany – ethical theory, philosophical psychology, philosophy of mind and language

D. Zimmerman – ethics, social and political philosophy, philosophy of mind

### Application Procedures

See [www.sfu.ca/philosophy](http://www.sfu.ca/philosophy), or visit the department.

### Graduate Course Disciplines

The department's graduate courses are divided into the following areas.

#### *Metaphysics and Epistemology*

PHIL 802, 803, 804, 805, 806

#### *Logic and Formal Studies*

PHIL 812, 813, 814, 815

#### *Value Theory*

PHIL 822, 823, 824, 825, 826

#### *History*

PHIL 852, 853, 854, 855

#### *Directed Studies*

PHIL 861, 862, 863, 864, 865

#### *Degree Completion*

PHIL 898-6 MA Thesis

PHIL 899-6 Non-Thesis Project Completion

PHIL 998-6 PhD Thesis

PHIL 880 is the pro-seminar completed once only by every student in the first year of graduate work.

In addition to Simon Fraser University courses, students may also satisfy requirements by completing courses at the University of British Columbia, after consultation with their supervisor.

## MA Program

### Admission Requirements

See “1.3.3 Admission to a Master's Program” on page 219 for university admission requirements. In addition, the applicant must have either a 3.33 cumulative GPA or a 3.5 GPA in third and fourth year philosophy courses. Honors degrees, where available, are preferred. The department pays close attention to letters of reference and writing samples. A student whose undergraduate work does not satisfy these conditions may be required to complete additional undergraduate courses, or to enrol as a qualifying student before consideration for admission.

### Degree Requirements

These requirements apply to all MA candidates.

- completion of six courses (excluding PHIL 898 and 899), one of which may be a 300 or 400 division undergraduate course with an A- grade or better, and graduate studies committee permission. One course must be PHIL 880 Pro-seminar, which must be completed in the first graduate study year.
- demonstrated competence in such foreign languages as the graduate studies committee requires for the proposed research.
- demonstrated competence in formal logic at the level of PHIL 210, or higher when relevant the student's research.

There are three ways to complete a philosophy master's degree. The following outlines these options.

### Non-Thesis Option

This is the recommended degree program option for most students who plan to apply for admission to a philosophy PhD program after completing an MA.

The program broadens and deepens philosophical education and allows the student to develop the necessary materials for a successful PhD program application. This non-thesis option has the following additional requirements.

- completion of at least one course in each philosophy area: value theory; metaphysics and epistemology; history of philosophy. Taken together with upper division undergraduate courses completed previously or in addition to the MA requirement, three courses in each area are required.
- completion of seven rather than six courses (excluding PHIL 899)
- a cumulative grade point average of at least 3.5 is required at graduation.
- PHIL 899, completed under the senior supervisor's direction. A paper, normally from a previously completed graduate course, is revised to a standard suitable in form and content for submission to a professional journal. The resulting professional paper normally shall not exceed 30 pages.
- in the final exam, the student presents the professional paper in a public forum directed by the supervisory committee and at least one other faculty member in the field. After the public presentation and discussion, the expanded committee evaluates the paper and the student's performance.

### Specialized Thesis Option

This option is intended for those who have a particular project and supervisor in mind when they enter the program, and especially those with interdisciplinary interests. It has the following specific requirements.

- the student normally enters the program with a well-defined project and a permanent (as opposed to interim) senior supervisor.
- the project and course of study is approved by the graduate studies committee.
- up to three of the required courses may be from outside the Department of Philosophy.
- a thesis, normally no more than 100 pages in length, giving evidence of independent critical ability is submitted and successfully defended.
- the specialization is noted on the student's final transcript under the heading ‘Committee Decisions.’

### Classic Thesis Option

This option has the following specific requirements.

- completion at least one course in each area of philosophy: value theory, metaphysics and epistemology; history of philosophy.
- a thesis, normally not more than 100 pages in length, giving evidence of independent critical ability is submitted and successfully defended.

## PhD Program

### Admission Requirements

See “1.3.4 Admission to a Doctoral Program” on page 220 for admission requirements. In addition, the applicant is expected to have either a 3.67 cumulative GPA in third year and subsequent philosophy courses. Honors degrees, where available, are preferred. The department pays close attention to both letters of reference and writing samples. If previous work does not satisfy the above conditions, additional undergraduate courses may be required to enter the MA program, or to enrol as a qualifying student before admission to the MA or PhD program.



## Degree Requirements

### Course Requirements

- completion of 11 philosophy courses: one must be the Pro-seminar, PHIL 880, completed in the first graduate year; two courses may be a 300 or 400 level undergraduate course with graduate studies committee permission, completed with a grade of A- or higher. The remainder must be graduate courses.
- demonstrated competence in such foreign languages as the departmental graduate committee requires for the proposed research.
- demonstrated competence in formal logic up to standard metatheory for first order logic, or higher when relevant to the proposed research.

### Distribution Requirements

The candidate must complete at least two courses in each of the following philosophy areas: value theory; metaphysics and epistemology; history of philosophy.

### Credit for Prior Courses

Up to four graduate courses completed here or at another institution prior to enrolling in the PhD program may, with the approval of the graduate studies committee, count toward course and distribution requirements.

### Area Examinations

Competency exams are required in three of the following four fields: metaphysics and epistemology, value theory, logic/formal studies, and history of philosophy. Each examination is based on a reading list whose mastery shall not take more than one term.

### Dissertation Prospectus

The final step before advancement to candidacy (or ABD status) is the dissertation prospectus, consisting of a critical literature survey, an extended abstract, and an outline of the proposed dissertation. After the supervisory committee approves the prospectus, the candidate presents and defends the proposed plan of study at an open departmental colloquium.

### Dissertation

PhD students write and defend a dissertation embodying original philosophical research.

## Department of Political Science

6072 Academic Quadrangle, 778.782.5487 Tel,  
778.782.5364 Fax, [www.sfu.ca/politics/graduate/index.html](http://www.sfu.ca/politics/graduate/index.html), [polgrad@sfu.ca](mailto:polgrad@sfu.ca)

### Chair

(to be announced)

### Graduate Program Chair

(to be announced)

### Faculty and Areas of Research

See "Department of Political Science" on page 128 for a complete list of faculty.

A.J. Ayers – global political economy, comparative development

J. Busumtvi-Sam – international organization and law, conflict management, political economy

M. Griffen Cohen – public policy, women's studies, economics

K. Chenard – public policy, political economics, quantitative methods

L. Dobuzinkis – public policy/administration, political philosophy and political economy (rational choice)

G. Fuji Johnson – political philosophy, democratic theory, public policy

J.F. Godbout – American political institutions, elections, political behavior

A. Heard – Canadian judicial and constitutional issues, comparative human rights

E. Hershberg – comparative politics of Latin America and politics of development, social sector reforms in the Andean region, conflicts over accountability for

human rights abuses under military regimes in the Latin America's Southern Cone

A. Hira – international political economy, Latin American studies

M. Howlett – public administration and policy, Canadian government and politics

T. Kawasaki – Japanese politics and foreign policy, international relations theory, and international relations in the Asia-Pacific region

D. Laycock – political philosophy and public administration/policy, Canadian government

S.J. MacLean – comparative development; political economy; African political economy

S. McBride – political economy, Canadian politics, globalization

A. Moens – international relations, comparative politics, US politics

A. Perl – urban studies, public policy

M. Pickup – quantitative methods, comparative and Canadian politics, political behavior

D.A. Ross – international security and conflict studies, Canadian foreign and defence policies

P.J. Smith – public policy/administration, Canadian and comparative local government, Canadian government and politics, federalism

P.V. Warwick – research methods, comparative government, Western Europe

S. Weldon – institutional and social context of political attitudes and behavior

### Fields of Study

The major fields of study are

Canadian government and politics  
comparative government and politics  
international relations

Within these three major fields of study there are three distinct thematic emphases: public policy, political economy and governance. However, the department may offer advanced study in other political science fields, subject to the availability of faculty research expertise.

### Admission Requirements

For general requirements see "1.3 Admission" on page 219. In addition, the department requires written statements of the student's current interests and proposed areas of research. Applications for graduate work will be considered with reference to the manner in which the proposed area of the candidate's research coincides with faculty teaching and research interests. See the list of faculty for general research interests. Should additional course work be deemed necessary, the graduate studies committee will indicate the same as a prerequisite.

A written statement of current research interests, three reference letters from qualified referees, and a sample of written work are also required.

### MA Program

The program may be completed through an essay or project option, a thesis option, or a field exam option. Students are admitted to the essay or project option and require approval of the graduate program chair to transfer to another stream. Except in extenuating circumstances, students may only transfer once.

In accordance with *Graduate General Regulation 1.6.4*, each student will be assigned a supervisory committee.

The essay or project option requires completion of either extended essays in two department fields of study or one research project. Students in the essay or project option complete five courses: POL 801 or 802 plus four additional courses from at least two of the department's three fields of study. A research project, to a maximum of 12,500 words (plus bibliography), must have substantial original content.

Each extended essay will elaborate upon course work research and is not to exceed 12,500 words (plus bibliography). Extended essays and research projects are defended in an oral defence.

To be admitted to the thesis stream, students must submit to the thesis supervisory committee a thesis proposal outlining a brief topic summary, its relevance, the methodology to be followed, a chapter-by-chapter outline, thesis completion timetable and a bibliography. The proposal must be approved by the thesis supervisory committee.

Students in the thesis stream complete four courses: POL 801 or 802 plus three additional courses from at least two of the three fields of study offered by the department. Students also must write a thesis, normally 18,750 to 25,000 words in length (plus bibliography) and defend it in an oral defence.

For field exam stream admission, students must submit, first to the supervisory committee and then to the appropriate department field committee, a field exam proposal outlining major and minor fields of study and a timetable for field exam completion. The field exam proposal is approved by the supervisory committee. To fulfill the requirements, students complete POL 801 or 802 plus five additional courses from at least two of the three fields of study. Students also pass two written field exams: one in their major and one in their minor field of study. The supervisory committee serves as the nucleus of the field examination committee. With the student's consultation, the supervisory committee will be expanded to include additional examiners if necessary. Students who fail one field examination, and one only, may retake the failed field examination.

## PhD Program

The department offers specialized research resources in Canadian government and politics, comparative politics, and international relations with a thematic focus on issues of political economy, public policy and governance.

### Admission Requirements

In addition to the minimum admission requirements ("1.3.3 Admission to a Master's Program" on page 219 of the *Graduate General Regulations*), a completed political science MA is required, normally with a minimum 3.67 GPA. How well the applicant's proposed research coincides with the department's focus on political economy, public policy and governance is an important consideration. Background deficiencies must be met by completing appropriate courses in addition to normal PhD work.

Admission applications are reviewed once a year by the department graduate studies committee. The program starts in September.

### Supervisory Committee

In accordance with *Graduate General Regulation 1.6.4*, upon program admission, the departmental graduate studies committee assigns a senior supervisor.

### Program Requirements

At least five graduate courses beyond the MA requirements plus a second language requirement, two comprehensive exams and a thesis are required.

### Course Work

Students must successfully complete a minimum of six graduate courses. All courses are approved by the supervisory committee and reflect areas of specialization within the fields of political economy, public policy and governance as identified in the student's letter of intent. Students complete POL 801 or 802 or equivalent.

## Language Requirement

Students must demonstrate a reading ability in a language other than English that is acceptable to the supervisory committee. Those studying subjects related to Canadian politics must demonstrate an ability to read French, determined by successful completion of a time limited exam consisting of a dictionary aided translation of a political science literature passage written in the language selected.

## Comprehensive Examinations

Prior to thesis research, students must successfully pass two comprehensive exams that are administered by the Department of Political Science.

## Thesis

Candidates successfully completing both comprehensive exams will complete POL 890 which culminates with the presentation as a seminar to the department outlining his/her draft research proposal.

After the seminar, and in consultation with the supervisory committee, the candidate prepares a final proposal for graduate studies committee approval prior to being forwarded to the graduate studies committee. The research proposal will state the thesis title, topic, general intent, methodology and bibliography and will be accompanied by a detailed research plan and completion timetable of each thesis chapter. The proposal should not exceed 2000 words in length, excluding bibliographic references.

The thesis should not be more than 300 pages and must represent an original contribution to the development of the discipline. The completed thesis must be successfully defended at an oral defence established in accordance with the *Graduate General Regulations*. See “1.9 Preparation for Examinations” on page 224) and “1.10 Examinations” on page 225).

## Performance Evaluation

In accordance with the *Graduate General Regulations* (see “1.8 Progress, Withdrawal and Leave” on page 223), the student's progress is reviewed periodically by the graduate studies committee. At least once a year, the supervisory committee submits a written report on the student's progress to the graduate studies committee to aid its deliberations. Students judged to have maintained unsatisfactory progress may be asked to withdraw.

## Time Limits

Although *Graduate General Regulation* 1.12 (see “1.12 Maximum Time for Completion of the Requirements for the Degree” on page 225) establishes an eight year time limit for PhD completion, the department expects the PhD program will be completed within four to five years.

# Department of Psychology

5246 Robert C. Brown Hall, 778.782.3354 Tel, 778.782.3427 Fax, www.psyc.sfu.ca

Chair

(to be announced)

Graduate Program Chair

R.D. Wright BA (Br Col), MA, PhD (WOnt)

Faculty and Areas of Research

See “Department of Psychology” on page 131 for a complete list of faculty.

K. Bartholomew – adult attachment, abuse in intimate relationships, male same-sex relationships

M. Blair – concept acquisition, perceptual learning, attention, computational modeling, expertise, cognitive science

J. Carpendale – social cognitive development, moral development and cognitive development

A.L. Chapman – borderline personality disorder (BPD), emotion regulation, impulsive and self-damaging behavior, mindfulness and acceptance, behavioral theory and theory

R.J. Cobb – role of social support and attachment in the development of marriage, prevention of marital distress and dissolution, the effects of the marital context on child development, dating relationships

D. Connolly – psychology and law, children and the law, children's autobiographical memory, eyewitness memory

D.N. Cox – health psychology, sport psychology, forensic psychology, cognitive behavior therapy

K.S. Douglas – violence, risk assessment and management, mental disorder and violence, forensic assessment, law and psychology

R.T. Fouladi – multivariate statistics, statistical

modelling, measurement, health psychology

S.D. Hart – psychology and law, psychopathy, mentally disordered offenders, violence, wife assault, psychological assessment, personality disorder

A. Herdman – cognitive neuroscience, child

development, magnetoencephalography,

electroencephalography, eye tracking, literacy,

language, attention, multisensory processing,

memory

G. Iarocci – developmental psychopathology, autism,

development of visual attention and perception, risk

and protective factors and cultural identity in the

development of first nations children

W.R. Krane – multivariate statistics, psychological

scaling, psychometric theory

R.G. Ley – forensic psychology (criminal and civil),

trauma and PTSD adolescent psychopathology and

delinquency, psychodynamic psychotherapy

M. Liotti – neuroscience of emotion in health and

disease, normal and abnormal development of

executive control functions, brain functional

reorganization in neuropsychiatric disorders

M.D. Maraun – psychometrics and philosophy of

science

J. Martin – theoretical and philosophical psychology,

history of psychology, social developmental

psychology

J.J. McDonald – cognitive neuroscience, human

electrophysiology, event-related potentials, attention,

multisensory perception, error processing, executive

functioning

C.G. McFarland – social cognition, autobiographical

memory, mood and social judgment, social and

temporal comparison processes

R. Mistlberger – neurobiology of circadian rhythms

and sleep; shiftwork adaptation

M.M. Moretti – self, attachment and psychopathology;

developmental psychopathology particularly conduct

disorder, aggression and violence in girls; systemic

intervention; program development and evaluation

T.P. Racine – joint attention, early communication,

social cognitive development

J.D. Read – memory in forensic contexts, applied

cognition, recovered memory debate and memory

impairments, autobiographical memory and

eyewitness testimony

U. Ribary – cognitive neuroscience brain imaging,

non-invasive structural and functional brain imaging to

study sensory-motor and cognitive processing in

children and adults, analysis of brain's network

R.M. Roesch – psychology and law, including forensic

assessment, jail mental health, competency to stand

trial, juvenile delinquency

M.T. Schmitt – collective identity, responses to social

inequality, political attitudes and ideology

K.L. Slaney – history of psychology, philosophy of

science, introductory and advanced statistics,

measurement

T.M. Spalek – visual attention; cognition; memory;

word recognition; controlled vs. automatic processing

A.E. Thornton – adult clinical neuropsychology, neurocognitive models of memory and executive functions, encoding and retrieval processes in cognitively impaired patients

W.L. Thornton – positive and negative modifiers of cognitive aging, everyday problem-solving and decision-making, executive function, clinical neuropsychology

J.L. Viljoen – adolescent offenders, youth violence, risk assessment and management, legal rights and competencies, forensic psychology

N.V. Watson – sexual differentiation of the nervous system, hormones and behaviour, neuroplasticity, psychopharmacology, sex differences in humans and non-human animals

D.J. Weeks – attention, perceptual-motor behavior, stimulus-response translation, cerebral specialization in Down syndrome, human-machine interaction

R.D. Wright – visual attention; cognitive neuroscience

S.C. Wright – Intergroup relations/social identity:

responses to discrimination and collective action;

prejudice and prejudice reduction; minority language

education.

A. Young – child psychopathology, anxiety, learning

disabilities

S.L. Zaitsoff – eating disorders, peer relationships

and psychopathology

## Associate Members

For areas of research, refer to the department listed.

D. Goodman, Department of Biomedical Physiology

and Kinesiology

A. Horvath, Faculty of Education

N. O'Rourke, Department of Gerontology

F.J. Pelletier, Department of Philosophy

J. Sugarman, Faculty of Education

C. Waddell, Faculty of Health Sciences

H. Weinberg, Office of Research Ethics

## Advisor

Ms. A. Turner, 778.782.4367, anita\_turner@sfu.ca

## Overview of Graduate Training

The department offers graduate programs culminating in MA and PhD degrees. The department is organized around training and research in clinical psychology, cognitive and biological psychology, developmental psychology, law and forensic psychology, social psychology, and psychological theory and methods. Graduate training in all areas is research intensive. In addition to training in general clinical psychology, the Clinical Program offers specializations in clinical child psychology, clinical forensic psychology, and clinical neuropsychology.

## Application and Admission Requirements

All applicants must complete an online application form that is available on the dean of graduate studies website (<http://www.sfu.ca/gradstudents/applicants>). Refer to the department's website for yearly deadlines and additional requirements (<http://www.psyc.sfu.ca/grad>). Applicants must submit all supporting documents in one complete package (two copies of official transcripts of all post-secondary course work, three academic referee forms with supporting letters, Graduate Record Examinations [GREs], a CV, a check list, and if applicable, TOEFL results). GRE and TOEFL scores can be submitted separately but must be received by the departmental deadline. Incomplete application packages will not be considered. The online application is received by the department only after the application fee is processed.

**Note:** the department reserves the right to admit only qualified applicants for whom departmental resources and appropriate faculty supervisors are available.

## Application as Special Student

Admission requirements for special students are outlined in the *Graduate General Regulations* (see 1.3.5 Admission Under Special Arrangements). Applicants apply online on the Dean of Graduate Studies website (<http://www.sfu.ca/gradstudents/> applicants). Students seeking admission as a special student must also submit all post-secondary transcripts to the department no later than one month prior to the term in which they plan to undertake the proposed course of study. Applicants must obtain written permission from the instructor of each course that they wish to complete. Special students completing psychology graduate courses must obtain a grade no lower than B- (2.67) in each course to be admitted as a special student in subsequent terms.

## Program Continuance

### Satisfactory Performance

Each graduate student's performance in research and course work is assessed at least once a year, with a formal annual review being conducted every spring. Each student receives feedback on his/her progress following this review. It is the policy of the Department of Psychology that a grade of less than B (3.0) on any course is deemed unsatisfactory. Any graduate student who obtains a grade of less than B (3.0) in two or more courses in the preceding calendar year, or who fails to maintain a cumulative grade point average (CGPA) of at least 3.5, may be required to withdraw from the program.

A student in the Clinical Program whose behavior raises the question of possible violations of the ethical codes binding the profession (CPA Code of Ethics, APA Ethical Principles, and CPBC Code of Conduct) will be advised of the nature of the problem behavior in writing, and requested to meet with the clinical program in a confidential closed session to determine the facts. Access to clinical clients may be immediately suspended pending the outcome of this meeting. The student will be invited to present any information and to respond to any questions. Whether or not the student attends, the committee members subsequently will meet in camera to consider the facts, and to decide on a recommendation to make to the graduate studies committee (GSC) of the department. Possible outcomes of this process include limitation of clinical training work, restriction of contact with clinical clients or research participants, remedial work, and recommendation of termination from the program. Issues pertaining to ethical integrity of students who are not in the Clinical Program are subject to the same codes of conduct and will follow the same procedures as described above, but will be handled directly by the graduate studies committee.

A student may appeal the decision to the GSC of the department. The GSC will adjudicate the appeal using procedures outlined in graduate general regulation 1.8.2 Review of Unsatisfactory Progress. The grounds for appeal are errors or unfairness in the procedures that were followed.

### MA Thesis

Students are required to present a written thesis proposal to their supervisory committee before the end of their fourth term in the program. After the thesis has been submitted, an oral defence will be scheduled. Students are expected to have completed their MA thesis by the end of their second year in the program. For further information and regulations, see *Graduate General Regulations* 1.9.2.

### PhD Dissertation

Before starting dissertation research, the candidate presents a formal proposal for evaluation. The candidate must present a dissertation proposal before

the end of the second program year, and is expected to complete the PhD dissertation within four years of program entrance. The completed dissertation will be defended in oral examination. Judgment will be made by an examining committee. For further information, see *Graduate General Regulations* 1.9.4.

### Supervisory Committees

For the MA thesis, students establish a supervisory committee before the end of their first term. The MA supervisory committee will normally consist of at least two Department of Psychology tenure-track or tenured faculty members, one of whom will be the senior supervisor and committee chair. Other individuals who are considered necessary by the student and senior supervisor may serve on the committee. For the PhD dissertation, students establish a supervisory committee by the end of the second term following program admission. The PhD supervisory committee will consist of a Department of Psychology tenure-track or tenured faculty member who will be the senior supervisor and committee chair, and two or more additional members, at least one of whom must be a tenure-track or tenured faculty member in the Department of Psychology.

### MA and PhD Requirements

Graduate students must maintain continuous registration (fall, spring, summer terms) throughout their graduate program in the department.

MA students must achieve satisfactory performance in all course work including two breadth courses that are outside the student's research or specialization area, unless otherwise specified as in the clinical area and program, a minimum of two area courses, and must complete an MA thesis (PSYC 898). MA students are expected to complete their thesis by the end of their second year in the MA program. MA students can apply mid-program to the fast-track PhD program (<http://www.psyc.sfu.ca/grad>); students who are accepted are not required to complete an MA thesis.

PhD students must complete a minimum of two area courses, comprehensive examinations (PSYC 999), and a dissertation proposal within two years of doctoral program admission. PhD students complete their doctoral dissertation (PSYC 899) by the end of their fourth year in the PhD program.

All students must register in area research seminars (PSYC 912, 913, 914, 916, 917 or 918) every fall and spring term during their MA and PhD programs and to complete the requirements of their area of specialization. Failure to meet department timelines is noted in the student's annual performance review.

### Area Specializations

#### Cognitive and Biological Psychology

PSYC 910-3 Research Design I: Experiments  
PSYC 911-3 Research Design II: Research Studies  
PSYC 913-1.5 Research Seminar (annually in the fall and spring terms)

Area course 1\*  
Area course 2\*  
Area course 3\*  
Area course 4\*

Area courses are determined for each student individually and may include courses both from within and outside of the department.

#### Developmental Psychology

PSYC 750-3 Proseminar in Developmental Psychology (Area course 1)  
PSYC 824-3 Research Issues in Psychology  
PSYC 910-3 Research Design I: Experiments  
PSYC 911-3 Research Design II: Research Studies  
PSYC 914-1.5 Research Seminar (annually in fall and spring terms)

PSYC 950-3 Seminar in Developmental Psychology (Area course 2)  
PSYC 950-3 Seminar in Developmental Psychology (Area course 3)  
PSYC 950-3 Seminar in Developmental Psychology (Area course 4)

### Law and Forensic Psychology

PSYC 790-3 Proseminar in Law and Psychology (Area course 1)  
PSYC 810-3 Seminar in Social Psychology and Law (Area course 2)  
PSYC 815-3 Mental Health Law and Policy (Area course 3)  
PSYC 824-3 Research Issues in Psychology  
PSYC 892-3 Research/Policy Practicum in Law and Psychology  
PSYC 897-3 Research Project/Law&Psyc/Forensic Psyc  
PSYC 910-3 Research Design I: Experiments  
PSYC 911-3 Research Design II: Research Studies  
PSYC 916-1.5 Research Seminar (annually in fall and spring terms)  
PSYC 990-3 Seminar in Law and Psychology (Area course 4)  
PSYC 990-3 Seminar in Law and Psychology (Area course 5)

### Social Psychology

PSYC 760-3 Proseminar in Social Psychology (Area course 1)  
PSYC 760-3 Proseminar in Social Psychology (Area course 2)  
PSYC 824-3 Research Issues in Psychology  
PSYC 910-3 Research Design I: Experiments  
PSYC 911-3 Research Design II: Research Studies  
PSYC 917-1.5 Research Seminar (annually in fall and spring terms)  
PSYC 960-3 Proseminar in Social Psychology (Area course 3)  
PSYC 960-3 Proseminar in Social Psychology (Area course 4)

### Theory and Methods

PSYC 910-3 Research Design I: Experiments  
PSYC 911-3 Research Design II: Research Studies  
PSYC 918-1.5 Research Seminar (annually in fall and spring)  
Area course 1\*  
Area course 2\*  
Area course 3\*  
Area course 4\*  
Area course 5\*  
Area course 6\*

\*four to six area courses are determined for each student individually and may include courses both from within and outside the department.

### Clinical Psychology Area and Program

Students in the clinical program are all members of the clinical area. The PhD program, accredited by the Canadian Psychological Association (CPA) and the American Psychological Association (APA), is based on the scientist-practitioner training model. The program provides generalist training and specialization streams in clinical child psychology, clinical forensic psychology, and clinical neuropsychology. Standing in the program is contingent upon maintenance of satisfactory performance in course work, thesis work, practicum skills development, comprehensive exams, and adherence to professional ethical standards (CPA Code of Ethics, APA Ethical Principles, and CPBC Code of Conduct), as evaluated in the annual review of student progress. Unsatisfactory academic progress and/or CPA ethical code of conduct violations (e.g. dishonesty, boundary violations, etc.) may lead to withdrawal from the clinical program.

Students may pursue generalist training or specialize in one of clinical child psychology, clinical forensic psychology, or clinical neuropsychology. Each specialty stream has another associated research area (see requirements for specialty streams below). MA program students who wish to specialize pending acceptance into the PhD program must have course selections consistent with the specialty stream requirements. Specialty stream students are members of the clinical area and an associated area. Associated areas include clinical child (development psychology), clinical forensic (law and forensic psychology), and clinical neuropsychology (cognitive and biological psychology).

#### MA Requirements

MA students must satisfactorily complete all of  
 PSYC 744-3 Proseminar in Psychopathology  
 PSYC 770-3 Proseminar in Personality  
 PSYC 820-3 Seminar in Individual Assessment  
 PSYC 821-2 Practicum in Individual Assessment  
 PSYC 822-3 Seminar in Intervention  
 PSYC 823-2 Practicum in Intervention  
 PSYC 824-3 Research Issues in Psychology  
 PSYC 880-3 Practicum  
 PSYC 898-6 MA Thesis  
 PSYC 910-3 Research Design I: Experiments  
 PSYC 911-3 Research Design II: Research Studies

plus two area courses (within the clinical area for general clinical students or in keeping with the specialty stream requirements as outlined below).

In addition, students must participate in area research seminars (PSYC 912 annually in the fall and spring terms) during their MA programs.

#### PhD Requirements

PhD students must satisfactorily complete all of  
 PSYC 600-3 Biological Bases of Behavior  
 PSYC 819-3 Ethics and Professional Issues  
 PSYC 886-9 Internship  
 PSYC 899-6 PhD Thesis  
 PSYC 999-6 PhD Comprehensive Examination\*

plus one breadth course (see *Clinical Program Breadth/Domain Requirements* below)

plus two area courses

At least two courses must be from the advanced topics courses in assessment or intervention, as listed below. Note that the chosen courses will depend upon specialization.

PSYC 806-3 Advanced Topics in Assessment  
 PSYC 807A-3 Advanced Topics in Intervention: Child Therapy  
 PSYC 807B-3 Advanced Topics in Intervention: Family Therapy  
 PSYC 807C-3 Advanced Topics in Intervention: Group Therapy  
 PSYC 807D-3 Advanced Topics in Intervention: Marital Therapy  
 PSYC 807E-3 Advanced Topics in Intervention: Cognitive-Behavior Therapy  
 PSYC 809-3 Advanced Topics in Applied Psychology

\*including an ethics oral examination

Students will not be permitted to enrol in PhD course work beyond the seventh term in the MA program, until the MA thesis is complete, or they receive joint approval from their senior supervisor and the director of clinical training.

Students are required to enrol in PSYC 825 (ongoing clinical training) every term prior to internship (PSYC 886) except when formally exempt.

In addition, students must participate in area research seminars (PSYC 912 annually in the fall and spring terms) during their PhD programs.

Students must successfully defend dissertation proposals before applying for internship (by September 30th).

### Clinical Specialization Requirements

#### Clinical Child Stream (Developmental Psychology)

PSYC 750-3 Proseminar in Developmental Psychology (Area course 1)  
 PSYC 807A-3 Advanced Topics in Intervention: Child Therapy (Area course 4)  
 PSYC 807B-3 Advanced Topics in Intervention: Family Therapy  
 PSYC 830-3/831-2 Seminar/Practicum in Child Evaluation and Treatment Formulation (Area course 2)  
 PSYC 912-1.5 Research Seminar (annually in fall and spring)  
 PSYC 944-3 Seminar in Psychopathology (Area course 3)

#### Clinical Forensic Stream (Law and Forensic Psychology)

PSYC 790-3 Proseminar in Law and Psychology (Area course 1)  
 PSYC 815-3 Mental Health Law and Policy (Area course 2)  
 PSYC 835-3 Special Topics in Civil Forensic Psychology (Area course 3)  
 PSYC 836-3 Special Topics in Criminal Forensic Psychology (Area course 4)  
 PSYC 890-3 Practicum in Clinical Forensic Psychology  
 PSYC 897-3 Research Project/Law & Psyc/Forensic Psychology  
 PSYC 912-1.5 Research Seminar (annually in fall and spring)

#### Clinical Neuropsychology Stream (Cognitive and Biological Psychology)

PSYC 882-3 Neuropsychology Practicum  
 PSYC 912-1.5 Research Seminar (annually in fall and spring)  
 PSYC 806-3 Advanced Topics in Assessment (Area course 1)  
 PSYC 907B-3 Advanced Topics in Biological Psychology: Neurocognitive Disorders (Area course 2)  
 PSYC 907F-3 Advanced Topics in Biological Psychology: Cognitive Neuroscience (Area course 3)  
 ANAT 516-3 Functional Human Neuroanatomy: Central Nervous System (UBC) (Area course 4)

### Breadth/Domain Requirements

A breadth course is a course that is outside of the student's research or specialization area. For students in the Clinical Program, it must be a non-clinical psychology course that falls within one of the five foundational areas described below. The Canadian Psychological Association (CPA) and the American Psychological Association (APA) require that five foundational areas be covered by the curriculum of all accredited programs. These include:

- biological bases of behavior
- cognitive-affective bases of behavior
- social bases of behavior
- individual differences
- history and scientific foundations of general psychology

When choosing elective and breadth courses, students must ensure adequate coverage of each foundational area during their graduate training.

### SFU/UBC Law and Forensic Psychology Stream

The Simon Fraser University Program in Law and Forensic Psychology, in co-operation with the University of British Columbia, offers forensic psychology students the option of completing both a PhD and an LLB degree. Students completing the co-operative PhD/LLB stream will be enrolled in either

the law and forensic psychology area, or the clinical forensic stream. This program permits students to be on-leave from one university while completing requirements in the other. All Simon Fraser University and department MA and PhD requirements must be met. Co-operative SFU/UBC stream students must complete the requirements for both a PhD in law and forensic psychology, and an LLB in law. For application and admission information for the Simon Fraser University PhD degree, see the Department of Psychology's *Application and Admission Requirements*. Applicants seeking the LLB degree must apply separately to the Faculty of Law at UBC.

The PhD is awarded by Simon Fraser University's Faculty of Arts and Social Sciences, and the LLB is awarded by UBC's Faculty of Law. Students must satisfy all requirements for the PhD and LLB degrees.

## Public Policy Program

3271 Simon Fraser University Vancouver, 515 West Hastings Street, Vancouver, BC, V6B 5K3,  
 778.782.5289 Tel, 778.782.5288 Fax,  
 www.sfu.ca/mpp, mpp@sfu.ca

#### Director

N.D. Olewiler BA (Col), MA (S Fraser), PhD (Br Col)

#### Professors

D.M. Gross Licence en Sciences Economique (Lausanne), MA (Carl), PhD (Tor)  
 J. Kesselman BA (Oberlin), PhD (MIT), Canada Research Chair  
 D. McArthur BSc (Sask), MA (Tor), MA (Oxf), Senior Policy Fellow  
 J.G. Richards BA (Sask), BA (Camb), MA, PhD (Wash, Mo)

#### Associate Professor

O.A. Hankivsky BA (Tor), MA, PhD (WOnt)  
 E.C. Stewart BA (Acadia), MA (S Fraser), PhD (LSE)

#### Adjunct Faculty

B. Laplante BComm, MSc (Montr), PhD (Qu)  
 T. Penikett BA (WOnt)  
 C. Reid BA (Qu), MA, PhD (Br Col)  
 M. Shaffer BA (McG), PhD (Br Col)

#### Steering Committee

L. Dobuzinskis, Department of Political Science  
 I. Geva-May, Faculty of Education  
 M. Howlett, Department of Political Science  
 D. McArthur, Public Policy Program  
 C.A. Murray, School of Communication  
 N.D. Olewiler, Department of Economics  
 J.G. Richards, Faculty of Business Administration  
 E.C. Stewart, Public Policy Program  
 A.R. Vining, Faculty of Business Administration

#### Advisor

Ms. D. Geil BA (S Fraser), 778.782.5289, room 3271  
 Simon Fraser University Vancouver, mpp@sfu.ca

This program offers the skills, insights and analytical frameworks that public sector and non-profit policy analysts and managers require. It focuses on the political and economic contexts of public policy analysis and offers specialized study. Designed to develop the strategic and global perspective required of tomorrow's senior policy analysts and managers, the program uses a cohort model which encourages student interaction and co-operation. An individual research project undertaken in MPP 808 and 809 (advanced policy analysis) is an integral part.

### MPP Program

This full-time two year cohort program, leading to a master of public policy (MPP), consists of fourteen courses plus a summer co-op/internship. Courses are sequenced through the fall and spring terms. The maximum course load is four courses per term.

## Admission Requirements

To be considered for admission, applicants must have a bachelor's degree from a recognized university. Those admitted with other credentials, or those with degrees who, in the judgement of the program director, are without adequate foundation in the social sciences, may be required to make up any deficiency without receiving graduate credit for those courses.

Students are normally admitted in September. It is expected that approximately 25 students will be directly admitted in any one year.

The normal admission minimum undergraduate GPA is 3.0 (or equivalent), although the admissions committee and program director may consider relevant work experience when determining admission eligibility. Criteria for admission, in addition to undergraduate grades, include strong letters of reference, an essay, and for those whose native language is not English, acceptable TOEFL scores (570 minimum) and a score of 5 or above on the Test of Written English. Students with non-Canadian undergraduate or graduate degrees are required to complete the Graduate Record Exam (GRE).

## Application Requirements

The following application documentation is required.

- a Simon Fraser University graduate application form, which is available from the Public Policy Program office or from [www.sfu.ca/mpp](http://www.sfu.ca/mpp)
- official undergraduate transcript showing all grades (mailed directly from the granting institution)
- three confidential reference letters (mailed directly from referees), at least two of which are from faculty members (may be waived for mid-career applicants with professional experience; letters from employers may be used). Reference forms are available from the office or from [www.sfu.ca/mpp](http://www.sfu.ca/mpp)
- a one-page essay that explains why the applicant wishes to pursue the MPP degree
- a student whose first language is not English and whose undergraduate degrees were from institutions where English is not the language of instruction are required to submit TOEFL and Test of Written English scores
- GRE score for non-Canadian degree applicants

## Program Requirements

The candidate must complete a total of ten core MPP courses, a summer co-op/internship, plus four additional elective courses that must be approved by the Public Policy Program director.

### Year One

Students complete the following eight core courses.

- MPP 800-5 Introduction to Public Policy Issues
- MPP 801-5 Economic Foundations of Policy Analysis I
- MPP 802-5 Economic Foundations of Policy Analysis II
- MPP 803-5 Political Foundations of Policy Analysis I
- MPP 804-5 Political Foundations of Policy Analysis II
- MPP 805-5 Research Techniques and Quantitative Methods I
- MPP 806-5 Research Techniques and Quantitative Methods II
- MPP 807-5 Introduction to Policy Analysis

In the summer term, the co-op/internship course MPP 850 is completed.

### Year Two

Students complete the following two core courses.

- MPP 808-5 Advanced Policy Analysis I
- MPP 809-5 Advanced Policy Analysis II

In addition, four elective courses are required. The program director, in consultation with the student, selects appropriate graduate courses offered by affiliated programs and departments. To satisfy these

requirements, and when appropriate, students may choose from the following MPP courses.

- MPP 810-5 Issues in Public Policy I
- MPP 811-5 Issues in Public Policy II
- MPP 812-5 Selected Topics in Public Policy I
- MPP 813-5 Selected Topics in Public Policy II
- MPP 825-5 MPP Directed Readings I
- MPP 826-5 MPP Directed Readings II

## Department of Sociology and Anthropology

5053 Academic Quadrangle, 778.782.3518 Tel, 778.782.5799 Fax, [www.sfu.ca/sociology](http://www.sfu.ca/sociology)

### Chair

J. Pulkingham MA, PhD (Edin)

### Faculty and Areas of Research

See "Department of Sociology and Anthropology" on page 133 for a complete list of faculty.

- Y. Atasoy – political economy, globalization, political sociology, development studies, gender relations, cultural politics, Islamic politics, Turkey, Middle East
- M. Boelscher Ignace – practice theory, language and culture, aboriginal resource management, aboriginal peoples of northwestern North America
- J. Bogardus – critical anthropology, political sociology, critical pedagogy, participatory action research
- A. Burk – public space, monuments, and imagined communities; politics of visibility; geographical fictions; critical adult education; writing
- W. Chan – feminist and critical criminology; racism, racialization, and criminal justice; immigration control; social exclusion; welfare fraud; violence against women; domestic homicides
- D. Chunn – feminism and law; critical media and family studies; historical sociology of crime, madness and social welfare
- D. Culhane – critical anthropology, anthropology of/and law and health, contemporary ethnography, visual anthropology
- F. de Maio – medical sociology, income inequality, quantitative methods, Latin America
- P. Dossa – migration, gender and health, critical feminist anthropology, medical anthropology, aging and health policy, politics of disablement
- N. Dyck – social, political, urban anthropology; sport, childhood, nationality; theories of tutelage, discipline
- K. Froschauer – new Canadian political economy, natural resource development, immigration entrepreneurship
- M. Hathaway – globalization and science, transnational organizations and networks, politics of the environment
- M. Kenny – social and cultural effects of genetics, genomics and neuroscience
- D. Lacombe – contemporary social theory, sexuality and moral panic, deviance and social problems
- R.J. Menzies – sociology and history of psychiatry and public health; cultural and institutional constructions of madness; law, governance and social control; sociology of citizenship and social justice, contemporary men's and fathers' rights movements; qualitative research methods
- B. Mitchell – families and aging, youth transitions, family relationships, health and well-being
- G. Otero – states, nations and indigenous movements; sociology of agriculture and food, NAFTA, region and Latin America
- C.K. Patton – social study of medicine, especially social aspects of AIDS and wilderness medicine, continental theory
- S. Pigg – medicine, science and transnational processes; biomedicine modernity; AIDS; sexuality; reproductive health

- J. Pulkingham – gender and the state; critical social policy studies; income security policy; gender, family law and divorce
- G.B. Teeple – human rights, global division of labour, sociology of art, Marxism and sociological theory, political economy of Canada
- A. Travers – sociological theory (feminist and queer), gender and technology, sociology of sport, social issues and movements
- H. Wittman – environmental sociology, social movements, food and society, qualitative methods, Brazil and Guatemala
- J. Yang – linguistic and cultural anthropology, including contemporary China, post-socialism and neo-liberalism, development and environment

Four graduate programs are offered: MA in sociology, MA in anthropology, PhD in sociology, and PhD in anthropology.

The full-time master of arts (MA) programs offer comprehensive foundation in social theory in sociology and anthropology disciplines, and rigorous training in research methodologies, a particular strength of the department. The programs facilitate and support completion within two years, in six or seven terms. Graduates will be well prepared to enter doctoral (PhD) programs, and to hold professional positions in public, private and non-profit sectors.

## Admission Requirements

See "1.3 Admission" on page 219 for general requirements. In addition to these requirements, the department also requires a written statement about current interests and prospective research. How well the applicant's proposed research coincides with the research and teaching interests of the faculty is an important admission consideration. PhD applicants must submit a work sample from earlier or ongoing graduate studies.

Admission applications are normally considered once each year at the end of January. The program commences in September. Contact the graduate program chair or secretary for further information.

## Areas of Study

The department offers the following areas of study.

- anthropology and sociology of medicine, health and society (particularly politics of knowledge production, disability, mental health, AIDS)
- Canadian society (ethnic relations, demographic issues, social inequality, political economy)
- critical pedagogy
- development studies (especially the Third World, including studies of tourism and international health)
- environmental issues
- minority indigenous peoples (particularly Canadian Native peoples)
- political sociology (with emphasis on political economy, ethnic relations and social movements)
- social and cultural anthropology (with emphasis on the anthropology of contemporary life)
- social policy issues (aging, family, gender relations, government administration of native peoples)
- sociological and anthropological studies of law and legal systems
- sociological theory, anthropological theory, and the philosophy of the social sciences (European intellectual history, holistic, comparative, historical and post colonial perspectives)
- sociology of agriculture, and science, technology and society
- sociology of sexuality and moral panic, and social problems and deviance

## Graduate Seminar

All full-time graduate students must attend and actively participate in the graduate seminar during their first two program terms. In subsequent terms,

attendance and enrolment is voluntary. Special arrangements will be made for part-time students to fulfil this requirement.

### Language Requirement

Although French or a foreign language is desirable, there is no prescribed language requirement but, where a language other than English is necessary for field work or reading, proficiency is required.

## MA Program

### Anthropology

Students complete all of  
SA 840-1 Graduate Seminar I  
SA 841-1 Graduate Seminar II  
SA 856-5 Qualitative Methodology  
SA 857-5 Research Design Seminar  
SA 870-5 Contemporary Theory in Anthropology  
SA 874-5 Historical Perspectives on Anthropological Theory  
SA 896-6 MA Research  
SA 898-6 MA Thesis

plus two elective courses from  
SA 871-5 Readings in Anthropology I\*  
SA 872-5 Readings in Anthropology II\*  
SA 875-5 Ethnographic Methodology: Social/Cultural Anthropology  
SA 886-5 Selected Problems in Social Analysis

### Sociology

Students complete all of  
SA 840-1 Graduate Seminar I  
SA 841-1 Graduate Seminar II  
SA 849-5 Selected Topics in the History of Sociological Thought  
SA 850-5 Selected Topics in Contemporary Social Theory  
SA 856-5 Qualitative Methodology  
SA 857-5 Research Design Seminar  
SA 896-6 MA Research  
SA 898-6 MA Thesis

plus two elective courses from the following.

SA 853-5 Readings in Sociology I\*  
SA 854-5 Readings in Sociology II\*  
SA 855-5 Advanced Quantitative Methods in Sociology  
SA 886-5 Selected Problems in Social Analysis

Students in both the anthropology MA or the sociology MA programs may also choose a graduate course or graduate directed readings course in another Simon Fraser University department, or from another university on a Western Dean's Agreement.\*

\*supervisory committee and departmental graduate program committee approval required.

### Thesis

The thesis, completed by both anthropology and sociology students, will normally consist of no more than 75-100 pages, inclusive of bibliographies, appendices and tables. At the discretion of the supervisory committee, the maximum number of pages may be increased, normally only to facilitate the inclusion of large appendices and tables. The student's supervisory committee and a qualified external examiner will examine the thesis, and a public oral defence will be held. Theses are bound and placed in the library.

Normally, the MA program is completed within six terms, or two full years of study.

Students may be required to complete more than the eight required courses at the discretion of the supervisory committees.

Required courses are normally completed within the first three terms of MA program enrolment.

## PhD Program

Students complete the following courses plus the PhD qualifying examinations (by registering in SA 897).

### Anthropology

Students complete all of  
SA 840-1 Graduate Seminar I  
SA 841-1 Graduate Seminar II  
SA 856-5 Qualitative Methodology  
SA 857-5 Research Design Seminar  
SA 870-5 Contemporary Theory in Anthropology  
SA 874-5 Historical Perspectives on Anthropological Theory  
SA 897-5 PhD Qualifying Examinations  
SA 899-6 PhD Thesis

plus one of  
SA 871-5 Readings in Anthropology I\*  
SA 872-5 Readings in Anthropology II\*  
SA 875-5 Ethnographic Methodology: Social/Cultural Anthropology  
SA 886-6 Selected Problems in Social Analysis

### Sociology

Students complete all of  
SA 840-1 Graduate Seminar I  
SA 841-1 Graduate Seminar II  
SA 849-5 Selected Topics in the History of Sociological Thought  
SA 850-5 Selected Topics in Contemporary Social Theory  
SA 856-5 Qualitative Methodology  
SA 857-5 Research Design Seminar  
SA 897-6 PhD Qualifying Examinations  
SA 899-6 PhD Thesis

plus one of  
SA 853-5 Readings in Sociology I\*  
SA 854-5 Readings in Sociology II\*  
SA 855-5 Advanced Quantitative Methods in Sociology  
SA 886-5 Selected Problems in Social Analysis

Students in either anthropology PhD or sociology PhD programs may also choose a graduate course or graduate directed readings course in another Simon Fraser University department, or from another university on a Western Dean's Agreement.)\*

\*supervisory committee and departmental graduate program committee approval required for these courses and/or extra-departmental courses

Required courses, including qualifying examinations, and preparation and defence of the thesis prospectus, are normally completed within the first six terms of enrolment.

Course requirements are the same whether the student has completed an MA in this department, or completed a comparable MA program at another university. However, the department's graduate program committee may make special arrangements so that required courses in theory and methodology are not repeated.

### Qualifying Exam, Defence

At the conclusion of SA 897, students must complete a written qualifying examination. After successfully completing the qualifying exam, and prior to commencing work on the thesis, students defend a written prospectus that the student has prepared during SA 857. This oral defence is public.

### Thesis

After the above is complete, then the thesis is written, and finally defended in an oral examination.

## Co-operative Education

In this program students gain work experience that complements their academic studies. MA students in good standing with a minimum 3.0 GPA may apply

after satisfactory completion of SA 850 or 870, and 857 plus one of SA 853, 854, 871, 872, 886, or equivalent. Supervisory committee recommendation and departmental graduate program committee approval is required. Students may complete the traditional two separate work term co-op program, or the three consecutive work term co-op internship. Arrangements are made through the faculty's co-op co-ordinator at least one term prior. See page 212.

## Urban Studies Program

2115 Simon Fraser University Vancouver, 515 West Hastings Street, Vancouver, BC, V6B 5K3  
778.782.7914 Tel, 778.782.5297 Fax, urban@sfu.ca, www.sfu.ca/urban

### Director

A. Perl AB (Harv), MA, PhD (Tor)\*\*

### Associate Professor

K. Ferguson BA (McG), MA, PhD (Duke)\*\*

### Assistant Professor

P.V. Hall BScSc (Cape Town), MSc (LSE), PhD (Calif)\*\*\*\*

M. Holden BSc (Vic, BC), MSc (Rutgers), PhD (New School, NY)\*

### Steering Committee

N. Dyck, Department of Sociology and Anthropology  
K. Ferguson, Department of History, Urban Studies Program  
P.V. Hall, Urban Studies Program  
M. Holden, Department of Geography, Urban Studies Program  
G. Mann, Department of Geography  
G. Price, City Program  
M.L. Roseland, Department of Geography  
P.J. Smith, Department of Political Science  
E.C. Stewart, Public Policy Program

\*joint appointment with geography

\*\*joint appointment with history

\*\*\*joint appointment with political science

\*\*\*\*joint appointment with sustainable community development

### Advisor

Ms. T. Evans BA (Manit), MA (S Fraser)

The city is a central feature of modern societies and economies. The development of cities over the past 500 years has enabled the evolution of the modern world. Academic interest in urban studies spans many disciplines and focuses on understanding cities, how they function, and how they change for the better.

This program develops the knowledge, skills and understanding that individuals, organizations, communities and governments need to improve human lives, strengthen municipal governance and advance urban sustainability. Students seek to understand, develop and diversify the structures, processes and actions that make cities livable. The curriculum integrates traditional understandings with new perspectives, both locally and globally.

Programs are available to both full-time and part-time students, ranging from mid-career professional to those who are simply curious about local politics, urban development, and sustainable cities. The program provides a strong foundation in economic, geographic, political and social analysis techniques and applies these skills to real-world urban problems.

Courses are offered in the evenings at Simon Fraser University Vancouver, located in the core of British Columbia's principal urban centre.

### Admission Requirements

Applicants for admission are normally required to have an undergraduate degree in one of the urban studies base disciplines (economics, geography,

political science, sociology and anthropology).

Applications from students with other degrees or with equivalent professional training and experience will also be considered. Admissions decisions will be based on material submitted with the application.

### Application

Applicants must submit the following documentation.

- application for admission to graduate studies
- official transcript of undergraduate grades (mailed directly from the granting institution)
- three confidential reference letters (mailed directly from referees, one of whom should be an academic)
- a statement of the applicant's program interest
- TOEFL and TWE test scores may be required for applicants whose first language is not English

### Financial Assistance

Limited student financial assistance is available.

## Master of Urban Studies Program

This program requires 32 units of URB courses, including the following required courses:

URB 670-4 Urban Research Methods  
URB 696-4 Seminar in Urban Studies  
URB 697-4 Research Project

These courses help students prepare an original urban research project to demonstrate integration of concepts and techniques acquired in previous course work. Up to two other graduate courses beyond those offered by Urban Studies may be substituted with the approval of the Urban Studies program committee.

## Graduate Diploma in Urban Studies

This diploma augments an undergraduate degree by providing exposure to, and development of urban expertise and insights. It requires completion of 24 URB course units. One or two graduate courses from other departments may substitute with permission.

## Department of Women's Studies

5102A Academic Quadrangle, 778.782.3333 Tel,  
778.782.5518 Fax, [www.sfu.ca/womens-studies](http://www.sfu.ca/womens-studies)

*Chair*  
(to be announced)

*Graduate Program Chair*  
H. Zaman BA (Dhaka), MA, PhD (Manit)

*Faculty and Areas of Research*  
See "Department of Women's Studies" on page 139 for a complete list of faculty.

L. Campbell, Women's Studies – Canadian women's history, social justice, social welfare  
M. Griffin Cohen, Political Science – feminist economics, public policy  
H. Leung, Women's Studies – queer theory and feminist theory; gender and sexuality in Asian cinemas; literacy and cultural studies  
J. Levitin, Contemporary Arts – women and film: theory and production; women and popular culture; women and comedy; Third World film and women  
C.K. Patton – sociology and anthropology; health; HIV/AIDS; methodology and methods training; social study of medicine  
M.L. Stewart, Women's Studies – women in Europe; French fashion and beauty industry  
H. Zaman, Women's Studies – women and work in comparative perspective; gender and development; feminist research methods; women of color and Canadian feminism; Third World

### Associate Members

For areas of research, refer to the department listed.  
M. Bubber, Library  
B. Burtch, School of Criminology  
P. Dossa, Department of Sociology and Anthropology  
O.A. Hankivsky, Department of Political Science  
J. Matsumura, Department of History  
J. Marchbank, Explorations in the Arts and Social Sciences Program  
K. Mezei, Department of English  
M.H. Morrow, Faculty of Health Sciences  
A. Travers, Department of Sociology and Anthropology

This program offers interdisciplinary study and research leading to a master's degree or a doctorate. The program provides a strong academic approach, with core courses on feminist theory and methodology and a blend of advanced studies in specific fields, as well as directed readings for more individualized study. Students develop and demonstrate intellectual and analytical skills, in accordance with the particular criteria of the level of study, and in consultation with their senior supervisor and supervisory committee.

## MA Program

### Admission Requirements

Applicants must satisfy the women's studies graduate program committee that they are prepared academically to undertake graduate work. In addition to University requirements, (see "Graduate General Regulations" on page 219), the program requires

- a substantial essay which is scholarly in format and approach. The submitted paper may be an undergraduate essay previously prepared, or one specially written for this purpose.
- a statement of women's studies interests and goals; normally students will be expected to present a definite proposal for their research.
- a short description of previous relevant course work and/or employment. Previous work should include both specialized disciplinary training and broader interdisciplinary work concerned with women.

The specific requirements for application are provided at [www.sfu.ca/womensstudies](http://www.sfu.ca/womensstudies).

A student will be admitted into a specific option (thesis, two extended essays or course intensive) and should apply to the options they prefer.

Qualified students will be accepted into the MA thesis option only if a suitable senior supervisor is willing to supervise the student. Senior supervisors will be selected from joint women's studies appointees and continuing faculty on the co-ordinating committee of the department including associate members.

A student can switch from one option to another only with the approval of the graduate program committee. A student can transfer to the thesis option only if there is a suitable supervisor available. A student with incomplete academic preparation for the MA program may be required to complete up to 12 units of additional work in either the Department of Women's Studies or another relevant program.

The graduate committee, which will deal with admissions and all matters pertaining to individual students, will consist of all continuing faculty members on the co-ordinating committee.

### Degree Requirements

The student normally will complete the following requirements.

- A minimum of 20 units of graduate seminar, including at least one of WS 800 or 822, maintaining at least a 3.0 CGPA, and
- Submit a thesis or two extended essays showing independent research and critical abilities. An MA

thesis is expected to be an in-depth empirical or theoretical study. The normal thesis length is 60-120 pages. Extended essays are defined as scholarly papers that meet the same standards of excellence as a thesis; they are examined in the same way, prepared in the same format, bound, and placed in the Library. Normally, the length of each essay is 30-60 pages. The extended essays are expected to demonstrate a breadth of knowledge and competence over several areas of study.

The student will be required to complete an oral examination on her or his thesis or papers at the end of the MA program. See "1.9 Preparation for Examinations" on page 224.

or

- The student must complete six graduate courses, one of which must be WS 822, and maintain at least a 3.0 CGPA.
- The student is also required to write two examinations based upon the subject areas of two of the completed Women's Studies courses.

Upon admission, the student will be assigned a two member advisory committee which has the responsibility for ensuring that the student fulfils all degree requirements. For further information concerning requirements, consult the department's graduate secretary or graduate chair.

### Supervisory Committee

Following the student's enrolment, a supervisory committee will be formed which has responsibility for determining, in consultation with the student, the projected program of study, selecting appropriate research topics, and ensuring that the candidate fulfils all degree requirements. The senior supervisor will be selected from joint appointees in the Department of Women's Studies and continuing faculty members on the co-ordinating committee. Other faculty outside the department who are considered necessary by the student and her/his supervisors may also be added to the committee.

## PhD Program

### Admission Requirements

Applicants must satisfy the Department of Women's Studies graduate program committee that they are prepared academically to undertake doctoral level work in women's studies. Normally, a master's degree will be required. Applicants are required to submit three letters of reference.

In addition to University requirements for admission to a doctoral level program, as listed in the *Graduate General Regulations* (see "1.3.4 Admission to a Doctoral Program" on page 220), the program requires:

- a sample of scholarly work in the form of a substantial essay which is scholarly in format and approach
- a statement of research interests and goals in women's studies; normally students will be expected to present a definite proposal for their research
- a short description of previous relevant course work and/or employment. Previous work should include both specialized disciplinary training and broader interdisciplinary work concerned with women and/or gender.

### Degree Requirements

Normally, the student completes the following.

- Students complete three graduate courses. The graduate committee, in consultation with the student's supervisory committee, may require a student to complete additional courses, either to obtain breadth of background in women's studies or to acquire specific preparation in the topic of the

student's proposed thesis. Two of any required courses may be from women's studies at the universities under the Western Deans' Agreement or relevant offerings in other Simon Fraser University departments, with the approval of the student's supervisory committee. Students who have completed the Simon Fraser University or UBC master of arts program before admission to the doctoral program will not be permitted to duplicate graduate courses that they completed during their MA programs.

- Students must pass comprehensive examinations that consist of three major scholarly/professional

tasks to be set by the student's supervisory committee in consultation with the student, approved by the Department of Women's Studies graduate committee, and completed to the satisfaction of the supervisory committee. One of the three tasks must be an exam or a review of the literature.

- Students prepare a PhD thesis proposal and defend it in a presentation that is open to the whole department.
- Students will submit a PhD thesis giving evidence of independent research and critical abilities in the interdisciplinary study of women and/or gender. The

student will be examined on the thesis in accordance with the *Graduate General Regulations* (see "1.9.4 Preparation for Examination of Doctoral Thesis" on page 224).

Normally students will complete course work before completing the comprehensive examinations, and will then go on to present and defend the PhD thesis proposal, all within two years.

For further information concerning requirements, consult the department graduate secretary or graduate chair.



# Faculty of Business Administration

3302 Lohn Building, West Mall Complex,  
778.782.3708 Tel, 778.782.4920 Fax,  
www.sfu-business.ca/mba/

## Dean

D.M. Shapiro BA (Calg), MA, PhD (Cornell)

## Associate Deans

E.W. Bukszar, Jr. BA (J Carroll), MBA, PhD (Arizona)  
C.M. Collins BCom, PhD (Alta)  
I.M. Gordon BA, MA, PhD (S Fraser), CGA, FCGA

## Faculty and Areas of Research

See "Faculty of Business Administration" on page 143  
for a complete list of faculty.

N.A.R. Abramson – strategy, international strategy  
and comparative management  
C. Atanasova – applied financial econometrics  
S.P. Bertels – sustainability, innovation, systems  
resilience  
A. Bick – investments and asset pricing  
G.W. Blazenko – business finance  
M.J. Brydon – management information systems  
G.R. Bushe – leadership, teamwork, organizational  
change  
E.W. Bukszar, Jr. – strategy  
J.C-W. Chang – marketing  
Y. Chen – accounting, performance measurement,  
international accounting  
E.U. Choo – management science  
D. Chung – accounting, capital markets  
B.D. Cohen – technology and operations,  
entrepreneurship  
C.M. Collins – adoption of new technology, marketing  
new technology  
D. Cyr – e-business and website design  
C.P. Egri – sustainability, CSR, leadership,  
international management  
C.E.N. Emby – accounting  
M. Favere-Marchesi – audit judgment, audit quality  
and review, fraud, international auditing  
M.R. Fizzell – accounting  
J.N.P. Francis – international and strategic marketing,  
negotiations, advertising  
E. Gatev – finance  
E.R. Gedajlovic – entrepreneurship, corporate  
governance, strategy and firm performance  
A.C. Gemino – management information systems  
I.M. Gordon – accounting theory, CSR and  
sustainability reporting, accounting education  
R.R. Grauer – business finance  
S. Gupta – operations management  
J.K. Hall – strategy, sustainable development, social  
impacts of innovation and entrepreneurship  
D.R. Hannah – management and organization studies  
G. Havers – ethics  
J.W. Heaney – business finance  
J.Y.C. Ho – marketing  
K. Hrazdil – accounting  
R.D. Iverson – management and organization studies  
J. Jermias – accounting  
P. Julia – operations management  
S.M. Kates – marketing, consumer research,  
branding, psychological growth  
J.H. Kietzmann – entrepreneurship, organizational  
strategy development  
P.C. Klein – business finance  
R. Krider – marketing  
R. Krishnan – international business  
B.A. Lautsch – industrial relations, management and  
organization studies  
T.B. Lawrence – management and organization  
studies  
M.B. Lazarova – international business  
J. Li – international business

E.A. Macdonald – accounting  
E.M.A. Maine – management of technology, policy  
I.P. McCarthy – technology and innovation  
management, operations management, strategy,  
organizational design  
L.N. Meredith – business marketing, marketing  
strategy  
M.A. Moore – strategy, managerial economics  
J. Nui – banking and corporate finance  
M. Parent – management information systems  
D.C. Parker – decision support systems  
A.D. Pavlov – business finance  
J. Peloza – marketing, new product development  
L.F. Pitt – marketing strategy with emphasis on the  
marketing-technology interface  
G. Poitras – international finance, econometrics,  
financial institutions  
B.H. Reich – project and program management,  
information technology governance  
A. Rubin – accounting  
K.E. Ruckman – acquisition, technology and imitation  
strategy  
N. Saraf – management information systems  
R.W. Schwindt\* – industrial organization; international  
trade; business, government and society  
D.M. Shapiro – industrial organizations, managerial  
economics, business and public policy  
J.P. Sheppard – business policy, corporate failure and  
survival  
C.F. Smart – business policy, organizational behavior  
D.R. Smith – business finance  
P-H. Soh – technology strategy, social networks,  
strategic alliances, innovation and entrepreneurship  
S. Spector – accounting  
K.G. Stewart – business communication  
D.C. Thomas – international business  
P.M. Tingling – management information systems  
K. Trottier – accounting, capital markets  
R.L. Tung – international business  
A. Vedrashko – finance and real estate  
A.R. Vining – business policy, business government  
and society  
O. Volkoff – management information systems  
A.G. von Nordenflycht – business strategy, corporate  
governance and professional services  
J.H. Waterhouse – accounting  
M.N. Wexler – business, government and society,  
organizational behavior and theory  
Y. Yang – marketing  
R.A. Yates – commercial law  
J.L. Zaichkowsky – marketing  
C.D. Zatzick – management and organization studies  
N. Zhao – error reporting and learning from errors in  
organizations, and organizational stigma  
\*joint appointment with economics

## Graduate Diploma Offered

graduate diploma in business administration

## Graduate Degrees Offered

master of business administration  
master of financial risk management  
doctor of philosophy  
doctor of philosophy under special arrangements

## Graduate Programs

Four programs leading to the MBA degree are  
offered: executive MBA, global asset and wealth  
management, master of business administration, and  
management of technology MBA.

The executive MBA program is a weekend program  
for mid-career managers or executives who want to  
continue working while studying in a collegial  
environment. The program takes a general  
management perspective; it focuses on  
organizational and decision-making processes that  
cut across functional divisions.

The global asset and wealth management program  
(GAWM), designed in co-operation with the financial  
community, provides expertise in the engineering and  
architectural aspects of investment management.  
Students obtain top-notch engineering skills through  
courses in economic theory and the science of asset  
allocation and security selection. They will also  
develop skills in the architectural side of investment  
management through courses in client relationship  
management, interpersonal communication,  
investment counselling and estate planning.

The Management of Technology program (MOT) is for  
those who already have at least two years of  
experience working in the technology sector and who  
are now considering a move into management.  
Students study part time over 24 months.

The MBA program provides broad-based and  
rigorous business training to prepare students for the  
global business world. Applicants should have  
non-business undergraduate degrees, and limited  
professional work experience, although work and life  
experiences will be considered for admission. The  
program is unique because it offers strong  
fundamentals to relatively inexperienced students  
over 12 months of intensive course work during three  
full-time terms, followed by a four-month internship.

The PhD program develops outstanding students in  
research and teaching for future employment at  
leading international academic institutions by  
designing a unique program of study under the  
guidance of their supervisor and the academic chair.

## Graduate Diploma in Business Administration

Segal Graduate School of Business, 500 Granville  
Street, Vancouver, BC, V6C 1W6, 778.782.5013 Tel,  
778.782.5122 Fax, www.sfu-business.ca/gdba

### Academic Chair

E.W. Bukszar, Jr. BA (J Carroll), MBA, PhD (Arizona),  
778.782.5195

### Executive Director

D. Cross BA (Qu), MHA (Ott), 778.782.5023

The graduate diploma in business administration  
(GDBA) provides core business skills to those with an  
undergraduate degree in a discipline other than  
business. Delivered online over three terms, the  
GDBA is a convenient and practical alternative to a  
traditional classroom-based program and provides  
business fundamentals to improve career prospects.

## Admission Requirements

The basic entry qualification is a degree from a  
recognized university in an area other than business  
administration, commerce or equivalent. A university  
level course in mathematics is required and three  
reference letters, preferably from supervisors or  
former professors. Candidates must be computer  
literate and familiar with the Internet. The program  
requires a strong command of the English language.  
Applications are assessed as they are received.

## Application

Candidates must submit the following documentation.

- Simon Fraser University's *Application for Admission to the Graduate Diploma Program in Business Administration*
- official transcript of undergraduate grades (mailed directly from the granting institution)
- three confidential letters of reference (mailed directly from the referees)
- TOEFL and TWE test scores, if applicable. Applicants must complete the Test of English as a Foreign Language (TOEFL) and the Test of Written English (TWE) if their first language is not English and/or their national language is other than English. The minimum University requirement for test scores is: IELTS (International English Language Testing System) with a minimum score of 7 on the Academic Modules; or TOEFL iBT (Test of English as a Foreign Language internet based test) with an overall score of 88 or better with a minimum score of 20 in each of the four components (listening, speaking, writing, reading); or TOEFL CBT (Test of English as a Foreign language computer based test) with a minimum score of 230 including a minimum essay score of 5.
- a recent passport style photograph

## Diploma Requirements

Students complete 24 units from the following.

BUS 550-2 Financial Accounting  
 BUS 551-2 Managerial Accounting  
 BUS 552-4 Managerial Economics  
 BUS 553-2 Quantitative Business Methods  
 BUS 554-2 Management Information Systems  
 BUS 555-4 Managerial Finance  
 BUS 556-4 Marketing Management  
 BUS 557-4 Human Resource Management/Organizational Behavior  
 BUS 558-3 Special Topics\*  
 BUS 559-4 Special Topics\*  
 BUS 560 Directed Studies\*

\*requires prior permission of the academic director

## Courses

The following BUS courses are offered for the graduate diploma: BUS 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560.

## MBA Program

Segal Graduate School of Business, 500 Granville Street, Vancouver, BC, V6C 1W6, 778.782.5013 Tel, 778.782.5153 Fax, mba@sfu.ca, www.sfbusiness.ca/mba

### Academic Chair

E. Bukszar BA (J Carroll), MBA, PhD (Arizona)

### Executive Director

D. Cross BA (Qu), MHA (Ott), 778.782.5023

This program provides broad-based and rigorous business training for the global business world. Applicants should have non-business undergraduate degrees, and limited professional work experience, although work and life experiences will be considered.

This unique program offers strong fundamentals to relatively inexperienced students over 12 months of intensive course work in three full-time terms, followed by a four-month internship. Students who completed the graduate diploma in business administration (GDBA) at a suitable standard will qualify for first term advanced standing. The program consists of required courses with no electives. Instead, four courses (designated with an asterisk) deepen and enhance core content. Course design will enable a significant course content individualization.

## Admission

Entry is competitive. Meeting the minimum admission requirements does not guarantee acceptance.

Applicants must have an undergraduate degree with a minimum 3.0 cumulative grade point average (CGPA) (B average) or an undergraduate degree and the GDBA with a minimum 3.0 CGPA.

Students apply at [www.sfu.ca/dean-gradstudies/apply.htm](http://www.sfu.ca/dean-gradstudies/apply.htm) and submit the following documentation by mail to the MBA program address above.

- official undergraduate transcripts mailed directly from the granting institution
- three confidential letters of reference mailed directly from the referees
- graduate management admission test (GMAT) results
- applicants whose primary language is not English, or whose previous education was conducted in another language, must submit evidence of satisfactory completion of a standardized English test that is acceptable to the University (see "1.3.2 Admission to a Graduate Diploma Program" on page 219). The minimum acceptable test scores are: TOEFL 88 with a minimum of 20 in each category (Internet based exam); or TOEFL 570 and TWE 5 (paper based exam); or TOEFL 230 (computer based exam) and IELTS with a 7.0 overall band score.
- a recent passport style photograph
- a current curriculum vitae

## Financial Assistance

Entrance scholarships, available on a limited basis, are awarded competitively. See "Financial Aid for Graduate Students" on page 229 or visit [www.sfu.ca/dean-gradstudies/finaids/htm](http://www.sfu.ca/dean-gradstudies/finaids/htm).

## Degree Requirements

Students must maintain a minimum 3.0 grade point average (GPA) (B average) and complete 45 units of prescribed courses as follows.

Course work follows three general themes:

foundation (F), transformation (T) and exploration (E).

### Term 1 Fall\*

BUS 701-2 Strategy† (F)  
 BUS 702-3 Marketing Management (F)  
 BUS 703-3 Managerial Economics (F)  
 BUS 704-3 Leadership and Team Building\* (T)  
 BUS 705-3 Financial/Managerial Accounting (F)  
 BUS 706-2 Data and Decisions (F)

### Term 2 Spring

BUS 707-2 Ethical Decision-making (T)  
 BUS 708-3 Finance (F)  
 BUS 709-3 Managing Information (F)  
 BUS 710-3 Emerging Markets\* (F)  
 BUS 711-3 Negotiation and Conflict Resolution (F)  
 BUS 712-3 Cross-cultural Management (T)

### Term 3 Summer

BUS 713-3 Essays† (E)  
 BUS 714-3 New Ventures \* (E)  
 BUS 715-3 Operations Management (F)  
 BUS 716-3 Sustainability\* (T)

### Term 4 Fall

BUS 727-0 MBA Internship (E)

\*specific course offerings determined annually

†pre-session course

GDBA graduates may apply for advanced standing for BUS 702, 703, 704, 705, 706, 708. A minimum 3.0 CGPA in that diploma program is required.

## Courses

The following courses are offered for this program: BUS 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716. Courses from the

other MBA programs may be used as substitutes for these courses at the discretion of the academic chair.

## Executive MBA Program

Segal Graduate School of Business, 500 Granville Street, Vancouver, BC, V6C 1W6, 778.782.5013 Tel, 778.782.5122 Fax, [emba\\_program@sfu.ca](mailto:emba_program@sfu.ca), [www.sfbusiness.ca/emba](http://www.sfbusiness.ca/emba)

### Academic Chair

A.R. Vining LLB (London), MBA, MPP, PhD (Calif)

### Executive Director

D. Cross BA (Qu), MHA (Ott), 778.782.5023

This program is for experienced, mid to upper level managers and professionals seeking to improve their capacity to lead, think strategically, and manage change. The program emphasizes global business leadership skills, strategic analysis, and change management.

The program utilizes a cohort model where students complete courses in the same sequence, and student interaction and co-operation are emphasized. Study groups and project teams are an important aspect of the learning experience.

Because Executive MBA students pursue full-time careers, classes typically meet on alternate weekends, all day Friday and Saturday, and are held at Segal Graduate School of Business.

## Admission Requirements

Applicants will be considered for admission based on the following criteria.

- current business experience, with a minimum of four to five years of managerial responsibilities
- GMAT (graduate management admission test) results
- academic qualifications, including an undergraduate degree (B average) or a professional designation (i.e. CA, CMA, CGA, PEng)\*
- three letters of reference

All students must demonstrate proficiency in mathematics, and Excel. A statistics workshop is offered in the summer prior to the term start.

\*While priority will be given to those with a university degree or a professional designation, a limited number of applicants may be admitted who do not hold a formal degree but possess exceptional business management qualifications.

The application deadline is April 1 for September enrolment in the same year.

## Degree Requirements

To qualify for the MBA degree, students must maintain a minimum average grade of B (3.0 GPA) and complete 14 courses from the following list.

BUS 601-2 Data and Decision-Making  
 BUS 602-4 International Management  
 BUS 603-4 Structure and Change in Organizations  
 BUS 604-4 Organizational Change and Development  
 BUS 606-4 Finance  
 BUS 607-4 Strategy  
 BUS 610-2 Directed Studies in Business Administration  
 BUS 611-4 Directed Studies in Business Administration  
 BUS 612-4 Directed Studies in Business Administration  
 BUS 615-4 Marketing Management  
 BUS 621-4 Information Technology and Organizational Transformation  
 BUS 632-2 Operations Management  
 BUS 651-4 Managerial Economics  
 BUS 652-2 Special Topics in Business Administration  
 BUS 653-2 Special Topics in Business Administration  
 BUS 654-2 Special Topics in Business Administration

BUS 655-2 Special Topics in Business Administration  
 BUS 660-4 Special Topics in Business Administration  
 BUS 661-4 Special Topics in Business Administration  
 BUS 662-2 Special Topics in Business Administration  
 BUS 663-4 Special Topics in Business Administration  
 BUS 670-3 Financial Accounting  
 BUS 681-4 Leadership and Teamwork  
 BUS 688-4 Industrial Relations  
 BUS 689-4 Special Topics in Business Administration  
 BUS 691-2 Business and Government  
 BUS 696-6 Applied Project  
 BUS 698-4 Directed Studies in Business Administration

Students may substitute, at the discretion of the academic chair, equivalent courses from another Simon Fraser University graduate program for the 600 division courses listed above.

## Courses

The following BUS courses are offered for the Executive MBA program: BUS 601, 602, 603, 604, 606, 607, 610, 611, 612, 615, 621, 632, 651, 652, 653, 654, 655, 660, 661, 662, 663, 670, 681, 688, 689, 691, 696, 698.

## MBA (Global Asset and Wealth Management) Program

Segal Graduate School of Business, 500 Granville Street, Vancouver, BC, V6C 1W6, 778.782.7962 Tel, 778.782.5122 Fax, [www.sfbusiness.ca/gawm](http://www.sfbusiness.ca/gawm)

### Academic Chair

A.D. Pavlov BSc (Sonoma), MBA (Thunderbird), MA, PhD (Calif)

### Executive Director

D. Cross BA (Qu), MHA (Ott), 778.782.5023

The global asset and wealth management program (GAWM) was designed with the financial community to provide expertise in engineering and architectural aspects of investment management. Students obtain engineering skills through courses in economic theory and the science of asset allocation and security selection. They will develop skills in the architectural side of investment management through courses in client relationship management, interpersonal communication, investment counselling and estate planning. Internships within the financial services community may be available to outstanding students who are enrolled in the full time GAWM program.

## Admission Requirements

Applicants must have an undergraduate degree in business, commerce, economics, a professional designation such as a CFA, or successful completion of Simon Fraser University's graduate diploma in business administration (GDBA). In addition, applications are considered based on the following.

- two to three years of work experience in the financial services industry
- a Graduate Management Admission Test (GMAT) score report
- three letters of reference from colleagues, supervisors or significant clients
- demonstrated English proficiency if an applicant has not graduated from an English speaking university or the applicant's first language is not English
- in-person or telephone interview by the admissions committee.

## Application

Students must submit the following documentation when applying for the GAWM MBA.

- Simon Fraser University's *Application for Admission to the GAWM MBA*
- official transcripts of undergraduate grades (mailed directly from the granting institution)

- three confidential letters of reference (mailed directly from the referees)
- GMAT (graduate management admission test) results
- TOEFL and IELTS test scores, if applicable. Applicants must complete the test of English as a Foreign Language (TOEFL) if their first language is not English and/or their national language is other than English. The minimum University requirements for test scores is: IELTS (International English Language Testing System) with a minimum score of 7 on the Academic Modules; or TOEFL iBT (Test of English as a Foreign Language internet based test) with an overall score of 88 or better with a minimum score of 20 in each of the four components (listening, speaking, writing, reading); or TOEFL CBT (Test of English as a Foreign language computer based test) with a minimum score of 230 including a minimum essay score of 5.
- a recent passport style photograph

## Financial Assistance

A limited number of scholarships may be awarded annually from funds donated by the GAWM Business Council, subject to funding. See "Financial Aid for Graduate Students" on page 229 for information about scholarships and awards for graduate students.

## Degree Requirements

Students must maintain a minimum 3.0 grade point average (B grade) and complete 42 units or more from the following list:

BUS 802-3 Foundations of Financial Economics  
 BUS 803-3 Financial Econometrics  
 BUS 804-3 Strategic Analysis For Wealth Management  
 BUS 805-3 Capital Markets  
 BUS 806-2 Client Relationship And Leadership Effectiveness I  
 BUS 807-2 Client Relationship And Leadership Effectiveness II  
 BUS 808-2 Client Relationship and Leadership Effectiveness Practice  
 BUS 809-3 Equity Security Analysis and Portfolio Management  
 BUS 810-3 Fixed Income Security Analysis and Portfolio Management  
 BUS 811-3 International Security Analysis and Portfolio Management  
 BUS 812-2 Tax and Estate Planning  
 BUS 813-2 Ethics, Wealth Management and the Securities Industry  
 BUS 814-3 Derivative Securities  
 BUS 816-3 Investment Policy  
 BUS 819-3 Final Project for GAWM Students

## Courses

The following BUS courses are offered for the global asset and wealth management program: BUS 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 816, 819, 823.

## MBA (Management of Technology) Program

Segal Graduate School of Business, 500 Granville Street, Vancouver, BC, V6C 1W6, 778.782.5259 Tel, 778.782.5153 Fax, [motmba@sfu.ca](mailto:motmba@sfu.ca), [www.sfbusiness.ca/mba/mot/](http://www.sfbusiness.ca/mba/mot/)

### Academic Chair

E.W. Bukszar, Jr. BA (J Carroll), MBA, PhD (Arizona), 778.782.5195

### Executive Director

D. Cross BA (Qu), MHA (Ott), 778.782.5023

This MOT program addresses high technology business sector needs, continuing the University's long tradition of industry collaboration. Graduates will

have a solid grounding in management theories and disciplines, particularly focused on topics relevant to an organization with technical core competencies. MOT MBA students work in enterprises that have advanced technology products or services. Most will have an undergraduate degree in a technical discipline; some will have an undergraduate business degree with technical work experience.

The program consists of six part-time terms including an industry-based final project.

## Admission Requirements

For admission, applicants to the MOT MBA must have a four year undergraduate degree with a minimum 3.0 cumulative grade point average (B average). They must also meet the following criteria.

- a minimum of two years of relevant work experience in a technology firm or technology position
- graduate management admission test (GMAT) test results
- three letters of reference from colleagues, supervisors or significant clients

## Application

The following are required to apply for admission.

- Simon Fraser University's online *Application for Admission to the MOT MBA*
- official transcripts of undergraduate grades (mailed directly from the granting institution)
- three confidential letters of reference (mailed directly from the referees)
- GMAT (graduate management admission test) results
- English is the language of University instruction and communication so an applicant whose primary language is not English or whose previous education has been conducted in another language must demonstrate command of English sufficient to pursue graduate studies in the chosen field. Applicants normally will be required to achieve a satisfactory score on a standardized English test acceptable to the University. This test must include a writing component. The Test of English as a Foreign Language (TOEFL) including reading, writing, speaking, and listening components is acceptable for this purpose. The IELTS (International English Language Testing Systems) is also acceptable. The minimum University requirements for test scores is TOEFL 88 with a minimum of 20 in each category (internet based exam), or TOEFL 570 and TWE 5 (paper based), or TOEFL 230 (computer based), and IELTS overall band score of 7.0
- a recent passport style photograph
- a current curriculum vitae

## Financial Assistance

See "Financial Aid for Graduate Students" on page 229 for information on university scholarships and awards that are available to graduate students.

## Degree Requirements

Students must maintain a minimum 3.0 grade point average (B grade) and complete 54 units (46 units if accounting and managerial economics are waived) or more from the following list:

BUS 750-4 Managing Technological Innovation  
 BUS 751-4 Managerial Economics†  
 BUS 752-4 Strategic Management of Technology-based Firms  
 BUS 753-2 Ethics and Corporate Responsibility  
 BUS 754-4 Marketing Tech-Based Products and Services  
 BUS 755-2 Topics in International Business  
 BUS 756-4 Strategic Use of Information and Knowledge  
 BUS 758-4 Business Operations Design

BUS 761-2 Leadership for the Technology Driven Enterprise  
 BUS 762-4 Project Management  
 BUS 763-2 Managing Self and Others: An Organizational Simulation  
 BUS 764-4 Financing the Organization  
 BUS 766-4 Managerial and Financial Accounting†  
 BUS 770-2 Special Topics  
 BUS 771-2 Special Topics  
 BUS 772-2 Special Topics  
 BUS 773-2 Special Topics  
 BUS 774-4 Special Topics  
 BUS 776-4 Special Topics  
 BUS 778-4 Directed Studies in Management of Technology\*  
 BUS 780-6 Applied Project

\*requires prior approval of the academic director

†corequisites may be waived for recent graduates in business or economics with prior approval of the academic director

Students wishing to complete the biotechnology management stream must successfully complete eight units of biotechnology specific courses as determined by the academic director.

Biotechnology management stream students are not required to complete two of the following courses.

BUS 756-4 Strategic Use of Information and Knowledge  
 BUS 762-4 Project Management  
 BUS 774-4 Special Topics in the Management of Technology

## Courses

The following BUS courses are offered for the Management of Technology program: BUS 750, 751, 752, 753, 754, 755, 756, 759, 761, 762, 763, 764, 766, 770, 771, 772, 773, 774, 776, 778, 780, 781.

## MFRM (Financial Risk Management) Program

Segal Graduate School of Business, 500 Granville Street, Vancouver, BC, V6C 5K3, 778.782.7962 Tel, 778.782.5122 Fax, mfrm@sfu.ca, www.sfbusiness.ca/mfrm

### Academic Director

A.D. Pavlov BSc (Sonoma), MBA (Thunderbird), MA, PhD (Calif)

### Executive Director

D. Cross BA (Qu), MHA (Ott), 778.782.5023

The rapid globalization of business and escalating volatility of financial markets has increased demand for professionals with skills to effectively manage financial and non-financial risks that are facing firms. The study of both types of risk makes the master of financial risk management (MFRM) unique in Canada. MFRM graduates will have a solid grounding in the fundamentals of finance, asset pricing, credit, market, operational and enterprise-wide strategic risk management. They measure, mitigate and learn to manage such risks in the global business arena. The program reflects current trends in the finance industry and continues the University's heritage of innovation. The program consists of three full-time terms.

## Admission Requirements

Admission is based on the following.

- a four year undergraduate degree in business, commerce, economics, mathematics, physics or other suitable quantitatively oriented programs. Candidates holding a professional designation such as a PRM or FRM and evidence of strong mathematics competency would also be ideal candidates. Students with a strong mathematical aptitude who have completed the graduate diploma

- in business administration offered by the University would be qualified for admission consideration
- preference is given to qualified candidates with at least two years of work experience
- an in-person or telephone interview with the admissions committee
- proficiency in the English language.

The admissions committee reserves the right to waive qualifications in exceptional circumstances.

## Application

Beyond general University graduate requirements, including demonstration of English language competency when an applicant's previous education has been in a language other than English, applicants must submit the following documentation.

- application for admission to the MFRM program
- graduate management admission test (GMAT) score report or the graduate record exam (GRE)
- a transcripts of grades from a four year undergraduate degree, mailed directly from the granting institution
- three confidential letters of reference, mailed directly from the referees
- a recent passport style photograph
- a current curriculum vitae

## Financial Assistance

See "Financial Aid for Graduate Students" on page 229 for information about scholarships and awards that are available to graduate students.

## Degree Requirements

A minimum 3.0 grade point average (B grade) is required and completion of 42 units including BUS 802-3 Financial Economics  
 BUS 803-3 Financial Econometrics  
 BUS 805-3 Capital Markets  
 BUS 810-3 Fixed Income  
 BUS 814-3 Derivative Securities  
 BUS 818-3 Advanced Topics in Business Finance  
 BUS 857-3 Numerical Methods  
 BUS 863-3 Operational Risk Management  
 BUS 864-3 Credit Risk Management  
 BUS 865-3 Market Risk Management  
 BUS 866-3 Enterprise-wide Strategic Risk Management  
 BUS 868-3 Perspectives on Risk and Insurance  
 BUS 869-3 Topics in Risk Management  
 BUS 870-3 Final Project

## Courses

The following courses are offered for the master of financial risk management program: BUS 802\*, 803\*, 805\*, 810\*, 814\*, 818, 857, 863, 864, 865, 866, 868, 869, 870.

\*also offered for the MBA in global asset and wealth management

## PhD Program

Segal Graduate School of Business, 500 Granville Street, Vancouver, BC, V6C 1W6, 778.782.6796 Tel, 778.782.5122 Fax, www.sfbusiness.ca/phd

### Academic Chair

D.C. Thomas BSc (Appalachian State), MBA (N Carolina), PhD (S Carolina), 3275 Segal Graduate School of Business, 778.782.7709 Tel

In a small cohort, students benefit from sharing experience with others studying in various areas of business through a small number of common core courses. In addition, students study in their area of specialization and research methods that are tailored to the needs of individual students and the research strengths of the faculty. Also included is a teaching development component involving a certificate program. This is for graduate students without

substantial teaching experience, or for experienced teachers who wish to upgrade their skills.

## Admission Requirements

The minimum doctoral admission university requirements are provided in "1.3.4 Admission to a Doctoral Program" on page 220. Students are admitted in the fall term only. A minimum GMAT score of 600 and 5 on analytical writing is required. Interviews and a statement of interest is used to determine fit between students and faculty.

## Application

Students must submit the following when applying.

- Simon Fraser University's graduate application form
- official transcript of undergraduate and graduate grades (mailed directly from the granting institution). It is advisable to include an unofficial copy of your transcript(s) with your application
- three confidential letters of reference using the Faculty of Business Administration PhD Reference Form, at least two of which are completed by faculty members at universities that comment on the student's ability to conduct original research
- Faculty of Business Administration PhD Application Supplemental Information Form and Check List
- official score on the graduate management admissions test (GMAT). It is highly advisable to schedule testing well in advance of the application deadline. If available, please include an unofficial copy of the test result upon application.

## English Language Competence

English is the language of instruction and communication at the University. An applicant whose primary language is not English or whose previous education was conducted in another language must demonstrate command of English that is sufficient to pursue graduate studies. Applicants normally will achieve a satisfactory score on a standardized English test that is acceptable to the University. This test must include a writing component. The Test of English as a Foreign Language (TOEFL) combined with the Test of Written English (TWE) are acceptable for this purpose. The International English Language Testing System (IELTS) is also acceptable. The minimum University requirements are as follows.

- IELTS with a minimum score of 7 on the academic modules; or
- TOEFL iBT (internet-based TOEFL test) with an overall score of 88 or better with a minimum score of 20 in each of the four components (listening, speaking, writing, reading); or
- TOEFL CBT (computer-based TOEFL test) with a minimum score of 230 including a minimum essay score of 5

## Degree Requirements

The program combines a small number of cohort courses, a research methodology minor, and specialty courses selected by the senior supervisor and the doctoral candidate's committee to create a curriculum which will be flexible within certain limits.

Candidates typically complete three core courses, three courses in the research methods minor, and three to five courses in their specialized area as determined by their senior supervisor and doctoral committee. A research project with a pass/fail grade is required in the third term, and a candidacy exam. The candidate must fulfil the university qualifications regarding a thesis and its public defence.

Those who lack a business degree may, at the discretion of the PhD director, be asked to complete qualifying courses (see qualifying courses).

**Core Courses (for all except finance students)**

Students complete all of

BUS 980-4 Theory Development in Business Administration

BUS 981-4 Research Methods in Business Administration

BUS 982-4 Dissertation Development Workshop

Core courses will be offered once a year.

**Core Courses (for finance students only)**

Students complete all of

BUS 815/ECON 815-4 Portfolio Theory

ECON 803-4 Microeconomic Theory II

ECON 837-4 Econometric Theory I

Core courses will be offered once a year.

**Research Methods Minor**

The research methods minor area requires three research methods courses approved by both the PhD program director and the student's senior supervisor. These courses are deemed pertinent to the student's specific research. Other courses will be considered if they meet the needs of the PhD candidate. Examples of some possible courses are as follows.

ECON 835-4 Econometrics

ECON 836-4 Applied Econometrics

ECON 837-4 Econometric Theory I

ECON 838-4 Econometrics Theory IIA

EDUC 863-5 Quantitative Methods in Educational Research

EDUC 867-5 Qualitative Methods in Educational Research

PSYC 911-3 Research Design II: Research Studies

SA 857-5 Research Design Seminar

STAT 602-3 Generalized Linear and Nonlinear modelling

STAT 801-4 Statistics

STAT 802-4 Multivariate Analysis

STAT 805-4 Non-parametric and Discrete Data Analysis

STAT 806-4 Lifetime Data Analysis

These three required research methods courses will be completed in the first five terms. The student's supervisor can add to, or substitute, minor courses in consultation with the director of the PhD program.

**The Major: Specialization**

These three to five courses are set and administered by the senior supervisor in consultation with the student's PhD committee and the PhD program director. These courses can include Faculty of Business Administration graduate courses, directed studies courses, special topics, as well as approved graduate courses in other programs or universities. It is highly recommended that at least one of the major courses be given by the student's senior supervisor. In special cases, the senior supervisor can recommend, in consultation with the PhD director, that the student complete fewer, or more, courses than required in the major. At least two courses should be offered at Simon Fraser University.

**Qualifying Courses**

Students without prior business education or those who lack some specific background, or combination of education and experience, may be required to complete qualifying courses after PhD program admission. These requirements are at the discretion of the PhD director in consultation with potential senior supervisors. The number of qualifying courses may vary widely depending on the student's specific background and their intended area of study.

**Third Term Project (Summer Project)**

PhD students will generate a research project in their third term that will be graded by the senior supervisor on a pass/fail basis. The student can rewrite the project once. If the grade is still deficient, they will be asked to withdraw from the program. Those who pass the research project will present it in an open research presentations. Questions and answers emerging in this context should assist the student to develop their research.

**PhD Comprehensive Exam**

PhD students must pass a comprehensive exam in the sixth term of the program. This will include written examinations in each student's major and methodology minor, followed by an oral exam.

**Proposal Defence**

Prior to registration in BUS 992, the candidate presents an oral thesis proposal defence. The PhD

director assigns a faculty member who is external to the candidate's committee, but within the faculty, to join in the examination. The exam will probe a written thesis proposal and may extend into the area in which the candidate intends to do their work. The senior supervisor, committee and external examiner will confer a pass/fail grade upon the candidate's presentation and written work. Evaluator suggestions concerning improvement are expected. Those who fail the proposal defence are given one further opportunity at which to defend. A second failure requires withdrawal from the program. No candidate, unless given special permission, is permitted to complete a candidacy exam after the eighth term.

**Thesis/Thesis Defence**

Following "1.9 Preparation for Examinations" on page 224 of the *Graduate General Regulations*, the PhD thesis will focus on original research in one long narrative/empirical work or a series of papers.

**Residence Requirement**

The candidate must be enrolled and in residence at the University for a minimum of five terms. See "1.7.3 Residence Requirement for the Doctoral Degree" on page 223.

**Teaching Option**

PhD students without substantial teaching experience may complete the Certificate Program for Graduate Students in University Teaching and Learning — instructional development, teaching enhancement and a practicum — offered by the Learning and Instructional Development Centre. The program enhances and develops teaching skills. The practicum involves developing and delivering an undergraduate course in the Faculty of Business Administration.

**Courses**

The following BUS courses are offered for the PhD program: BUS 975, 976, 977, 978, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992

# Faculty of Communication, Art and Technology

8800 Technology and Science Complex 2,  
778.782.8790 Tel, 778.782.8789 Fax,  
http://www.fcat.sfu.ca

## Dean

C. Geisler BA (Carleton Coll), MS (W Illinois), PhD  
(Carnegie-Mellon)

## Advisor

Ms. L. McGregor BCom (McM), 778.782.5332 Tel  
The Faculty of Communication, Art and Technology  
offers programs in communication, contemporary  
arts, interactive arts and technology, and publishing.

## Graduate Degrees Offered

master of arts  
master of fine arts  
master of publishing  
master of science  
doctor of philosophy  
doctor of philosophy under special arrangements

## School of Communication

K9673 Shrum Science Centre, 778.782.3595 Tel,  
778.782.4024 Fax, www.cmns.sfu.ca,  
gradcmns@sfu.ca

## Director

M. Laba BA (York, Can), MA, PhD (Nfld)

## Graduate Program Chair

J. Marontate BA (York, Can), MSc, PhD (Montr)

## Faculty and Areas of Research

For a complete list of faculty, see "School of  
Computing Science" on page 76.

P.S. Anderson – telecommunication and broadcasting  
policy; communication technology; communication to  
mitigate disasters/emergency communications

R.S. Anderson – international development;  
negotiation and dialogue in conflict and intervention;  
community economic development

E. Balka – politics, design, implementation and use of  
health information technologies; women and  
information technologies; technology assessment;  
participatory design of technology; information  
technology and work; technology and social  
movements; technology and occupational health  
A.C.M. Beale – Canadian and global cultural policy;  
feminist political economy of communication; history  
of communication thought; film and video

P. Chow-White – new media and technology; race;  
culture; information society; genomics  
K.A. Cross – critical communication theory; political  
communication; news and democracy; elections and  
campaigns; ideology and discourse; political  
economy; cultural studies; strategic communications  
for social and development movements; global news  
trends

Z. Druick – documentary film; film history and theory;  
technology and popular culture; narrative, semiotic  
and aesthetic theory; critical social and cultural theory  
A.L. Feenberg – critical theory of technology;  
technology studies; Marcuse and the Frankfurt  
School; Heidegger; online community; online  
education; software development for online  
discussion forums

R.S. Gruneau – popular culture and media;  
communications and cultural theory

S. Gunster – advertising and consumer culture;  
critical cultural theory; political discourse;  
environmental communication

R.A. Hackett – political communication; journalism  
and media studies; news and ideologies; media and  
social movements

L.M. Harasim – computer mediated communication  
and collaboration; telelearning and telework; social  
network design and evaluation

D.Y. Jin – political economy of culture and media;  
telecom policy and industry; globalization; Asia media  
and culture; new media

S. Kline – advertising; children's media and culture;  
audience research; public communication campaigns;  
non-broadcast video designs and uses

M. Laba – media analysis; popular culture; social  
issues communication; social advertising

B.S. Lewis – film and video studies, comparative  
broadcast and film policy

R.M. Lorimer – publishing; mass communication

J. Marontate – technology and culture; art worlds;  
science studies; innovation; cultural heritage;

interdisciplinary networks and critical theory  
K. McAllister – cultural studies and visual culture;  
memory and trauma studies; racialization; (post)

colonialism, refugee studies; Asian Canadian studies;  
photography; memorials; fieldwork  
G. McCarron – history and theory of communication;

history and theory of rhetoric; discourse analysis; film  
studies; advertising; cultural theory

D.C. Murphy – media production: documentary and  
advocacy video production; sound design; video  
post-production processes (motion graphics,  
compositing, keying and aesthetic design); media  
production as a pedagogical process; social  
implications of media. Educational design: interactive  
pedagogical media, web-based interfaces; media  
production facility design.

C.A. Murray – cultural participation and creative labor;  
cultural infrastructure and creative cities; cultural  
industries and broadcast policy; communication rights  
and global trade; research design in policy evaluation  
S. Poyntz – children, media and digital culture; history  
of media literacy; theories of the public sphere; film  
and historical representation

R.K. Smith – management of technological change

B.D. Truax – acoustic and electroacoustic  
communication; soundscape studies; audio aspects  
of media and advertising; electroacoustic and  
computer music

Y. Zhao – political economy of international  
communication; relationship between communication,  
development and democracy in transitional societies;  
media and information industries in China

## Adjunct Faculty

S. Braham – communications/computing systems,  
planetary explorations, space communications

N. Duxbury – Canadian cultural planning and  
policy-making; cultural indicators; cultural  
infrastructure

J.A.D. Holbrook – science, technology and regional  
innovation systems; evaluation of research networks;  
return on investment in research and innovation

Communication is a comparatively new discipline that  
builds on traditional social science disciplines. It  
focuses on analysis of the context and means in  
which information in its diverse forms is created,  
packaged, circulated, interpreted, and controlled. As  
an applied science, communication is important in the  
creation and critical evaluation of legal and public  
policies in broadcasting, telecommunications, and  
community and international development. The study  
of communication has also become prominent in the  
professions, notably in law, education, community  
medicine, counselling, and mental health, and in  
business administration, and broadcasting.

The school draws on a variety of perspectives, but it  
is most readily distinguished by the fact that it treats  
communication as a humanistic social science with  
both theoretical and applied dimensions. Students  
explore communication theory and practice and are  
encouraged to apply research and theory to issues  
and problems in contemporary societies and cultures.

The school offers graduate programs leading to an  
MA degree or PhD degree.

## Fields of Study and Research

Faculty resources provide for graduate studies in the  
following general areas of interest. Students may wish  
to specialize in one or more of these general areas, or  
to select related aspects from two or more.

- theoretical foundations in communication studies
- communication in history
- broadcasting and telecommunication regulation,  
policy and practice
- communication, development and environment
- the information society/economy
- computer mediated networks and virtual  
environments
- publishing
- international communication, inter-cultural  
communication
- science and technology policy, technology-transfer,  
communication of science
- media and cultural studies
- cultural policy and cultural politics
- acoustic environments and communication
- management of technology
- telework, telelearning, distance education
- political communication
- communication in conflict and intervention
- crisis/emergency communication

## Research and Training Facilities

Assessment of Technology in Context Design  
Laboratory

Graduate Resource Centre

Interactive Media Lab (network and multimedia  
studies)

Media Analysis Laboratory

Sonic Research Studio and Soundscape Archives

Telematics Laboratory

## MA Program

### Admission Requirements

Admission requires a bachelor's degree in  
communication (with at least a good second-class  
standing) or an equivalent degree in an  
interdisciplinary or humanities program, in one of the  
social sciences, or in socially oriented information  
systems, or biological sciences. However, qualified  
students will be accepted only if the communication  
graduate studies committee finds a suitable senior  
supervisor. Besides applications from communication  
students, the school encourages applications from  
those with experience in humanities, social or  
biological sciences, and interdisciplinary studies.

All applications should be directed to the graduate  
studies committee and, in addition to general  
university requirements, should include the following.

- an online application along with the application fee
- all official post-secondary transcripts
- a three to five page succinct statement of interests  
and goals, together with an account of relevant  
academic and personal background

- two samples of scholarly and/or other written work relevant to the applicant's objectives and any tapes, films, etc. the applicant considers relevant
- three references, at least two of whom should be familiar with the applicant's academic work.

The application deadline is December 15. The committee announces decisions before the last week of April. Students enter the program in fall term.

The school recognizes working individuals' special needs. The graduate program is approved for part-time students but University regulations require all MA students to complete studies within 12 full-time equivalent terms or six years, whichever is shorter.

As a condition of entry into the program, students with undergraduate degrees in disciplines other than communication may be required to complete up to two additional courses to complete their MA. These conditions, if applicable, will be specified in the letter of offer as determined by the admissions committee on an individual basis.

### Advising and Supervision

Each new student is assigned an interim advisor upon program admission. The student selects a senior supervisor and, in consultation with this faculty member, selects one or two other faculty to serve on a supervisory committee by the beginning of the student's third term. Although the graduate studies committee (GSC) will endeavor to provide interim advisors with expertise in the student's stated area of research interest, there is no obligation to select the interim advisor as senior supervisor.

### Degree Requirements

The program may be completed through extended essay, or project or thesis. Each is equivalent. Each requires the completion of the same number of courses, is research based and is subject to external examination. Students determine which option is suitable for their research in consultation with their senior supervisor and supervisory committee.

The thesis represents a longer form of research and is normally between 80 to 100 pages, inclusive of all bibliographies and appendices.

The extended essays requires completion of two essays of not more than 40 pages, which may be on related fields, but which may not substantively duplicate papers presented in course work.

A student may present an alternative format such as a CD-ROM, website, video or audio documentary, on-line software development, or other technologically based formats. All projects need to be documented in a written form, not to exceed 40 pages, and be determined in consultation with the senior supervisor. This documentation should include the rationale behind the project, a description of the research undertaken, as well as a description and evaluation of the project itself.

All thesis and essay options will be deposited in the University library. Procedures for the supervision and examination of extended essays and projects are the same as those for theses:

All master's students present, discuss and defend their MA thesis, project and essay options in an exam before their supervisory committee and external examiner as required by graduate regulation 1.9.

Extensive guidelines for each option are found on the School of Communication's graduate website: [www.cmns.sfu.ca/ma-guidelines](http://www.cmns.sfu.ca/ma-guidelines)

Supervision: a supervisory committee should be approved by the graduate studies committee at the beginning of the third term.

Formal review: graduate degree candidates will have an annual formal review of their academic progress by the graduate studies committee.

Graduate courses are in six groups. Group 1 contains survey courses that define and map the field and expose students to faculty interests and research programs. Group 2 contains research methods and methodology courses that help with research projects. Group 3 contains the school's various research area courses. In group 4 courses, students complete field work, or work and study in a professional setting. In group 5 courses, students perform research and/or reading under faculty member supervision. Group 6 refers to the course designations for work on theses, projects, extended essays, or dissertations in process, or colloquia where students present such work, and for comprehensive examinations.

### Course Requirements

At least four graduate courses (normally completed before beginning a thesis, a project, or two extended essays) which must include the following, unless otherwise stipulated as a condition for admission:

- one course from group 1
- one course from group 2
- two additional courses, at least one of which is selected from within the school. No more than one may be completed with the same instructor, except by permission of the graduate studies committee.

#### Group 1 Courses: Surveys of History and Theory

CMNS 800, 802, 804

#### Group 2 Courses: Research Design and Methods

CMNS 801, 805

#### Group 3 Courses: Research Area Courses

CMNS 815, 830, 840, 845, 855, 856, 857, 858, 859

#### Group 4 Courses: Research Internship and Fieldwork

CMNS 881, 882

#### Group 5 Courses: Directed Readings and Studies

CMNS 850, 851, 880

#### Group 6 Courses: Colloquia and Theses

CMNS 860, 898

### Co-operative Education

The co-operative education program combines professional work experience with academic studies. After the first two terms of the program, students may alternate work and academic terms. All work positions are in paid study related jobs and may lead to the communications project or extended essay in lieu of a master's thesis. Application for the co-op program is made through the school's co-op co-ordinator and the co-operative education office.

### PhD Program

The school will offer PhD students the opportunity to choose from the fields of study and research listed above under *Faculty and Areas of Research* and *Fields of Study and Research*.

#### Admission Requirements

Admission requirements will normally include a master's degree or an exceptional record of undergraduate and/or graduate work in a relevant area of study. Enrolment is strictly limited.

For general university admission requirements, see "Graduate General Regulations" on page 219. In addition, applicants are asked to provide

- an online application along with the application fee.
- a two to three page succinct account of their past academic experience, which would include scholarly work, research accomplished or in progress, relevant teaching experience and degree of responsibility for course content

- samples of scholarly writing, research reports, or other material
- three references (at least two of whom should be familiar with the applicant's academic work)
- a brief outline of the applicant's research objectives, with representative bibliographical references and other source material, where applicable, including a statement of interest with an explanation or account of how they see their research objectives fitting in with the School of Communication and potential supervisors.

The application deadline is December 15. The committee announces its decisions before the last week of April. Students enter in the fall term.

### Degree Requirements

Doctoral candidates complete course work, comprehensive exams, a dissertation proposal, and submit a dissertation which demonstrates an original contribution to the field of communication. Candidates normally satisfy the following requirements.

### Course Work

Students complete a minimum of nine graduate courses for those with a bachelor's degree (including CMNS 860), or five graduate courses for those with a master's degree. The graduate studies committee may require additional courses depending on the student's background and dissertation project. These courses are normally completed before completing the comprehensive examinations, or beginning a dissertation, and will include the following:

- two courses from group 1
- one course from group 2
- a minimum of two additional five-unit courses for those entering with a master's degree, at least one of which is selected from within the school, and may include other courses from groups 1 and 2. A minimum of six additional courses is required of PhD students without a master's degree. A minimum of four of these must be completed from the school's course offerings. For all students, a maximum of two courses may be completed from groups 4 and 5. No more than two of group 4 or 5 may be completed with the same instructor, except with graduate studies committee permission.
- students will be required by the communication graduate studies committee to demonstrate adequate command of any language essential to the completion of their dissertations

#### Group 1 Courses: Surveys of History and Theory

CMNS 800, 802, 804

#### Group 2 Courses: Research Design and Methods

CMNS 801, 805

#### Group 3 Courses: Research Area Courses

CMNS 815, 830, 840, 845, 855, 856, 857, 858, 859

#### Group 4 Courses: Research Internship and Fieldwork

CMNS 881, 882

#### Group 5 Courses: Directed Readings and Studies

CMNS 850, 851, 880

#### Group 6 Courses: Colloquia, Theses and Comprehensives

CMNS 860, 895, 899

### The Comprehensive Examination

In consultation with their supervisory committee, students must apply to complete the comprehensive examination following completion of required course work and normally no later than the sixth term. Upon passing, the student is admitted to full degree candidacy. The examination may be retaken once.

To prepare for the comprehensive exam, students select and design two comprehensive fields which may be related to the dissertation topic itself or carve out an area of potential teaching competence. At least one examination shall survey a range of theoretical or methodological frameworks within the study of communication to meet a breath requirement.

The student submits definition papers, including bibliography, on each of the fields in preparation for both a written and oral examination.

#### Dissertation Proposal

Students enrol in CMNS 899 in the term immediately following completion of the comprehensives, and will present a full dissertation proposal to their supervisory committee. Specific comprehensive examinations and dissertation proposal guidelines are available from the graduate program co-ordinator.

#### An Original Dissertation

PhD students complete a doctoral dissertation that demonstrates an ability to make an original contribution to the field of communication.

#### Advising and Supervision

Students are advised to read section 6 of the *General Regulations* and the school's *Guidelines for Supervisory Committees*.

Upon admission, students are assigned an interim advisor. The student selects a senior supervisor and, in consultation, selects two or three other faculty for a supervisory committee by the beginning of the third term. Although the graduate studies committee endeavors to select interim advisors with expertise in the student's research area, there is no obligation to choose the interim advisor to be senior supervisor.

Students have the right to discuss their programs and status with the graduate program chair, to ask for a review of any recommendation or grade, and to appeal committee, supervisor or faculty decisions.

## School for the Contemporary Arts

Room 601C SCA, 778.782.3724 Tel, 778.782.5907  
Fax, www.sfu.ca/sca, mfragrad@sfu.ca

#### Director

M.S. Gottfrit BA (C'dia), MA (McG) – music

#### Graduate Program Chair

J. Radul BMus, BA (S Fraser), MFA (Bard)

#### Faculty and Areas of Research

See "School for the Contemporary Arts" on page 152 for a complete list of faculty.

C.V.A. Browne – documentary and innovative film production, poetry, fiction, screenplay, poetics, interdisciplinary performance

A. Clay – drawing, painting, text work, installation, contemporary feminist and critical theories

H. Daniel – performance and new technologies

A. Eigenfeldt – music for dance, MIDI systems, digital signal processing

M. Eist – ballet, modern dance, body therapies, choreography, dance education, dance history

J. Garay – choreography, performance, costume design

M.S. Gottfrit – electroacoustic music, film-sound design and scoring

P. Gruben – directing, scriptwriting, editing: dramatic and experimental narrative

S. Hill – theatre performance, directing, devising, interdisciplinary collaboration

R. Kitsos – choreography, performance, combining new technologies and performance

D.D. Kugler – directing, dramaturgy, play-making

J. Levitin\*\* – film production and theory, independent film making, feminist film criticism, ideological studies, third world film, comedy, directing, women's studies  
D.K. MacIntyre – music composition, interdisciplinary composition and performance, collaboration  
L. Marks – experimental and electronic media, non-Western approaches to media technologies, representation of the senses, and Arab and African cinema  
D. Oleksijczuk – images and objects produced in Britain and Canada, intercultural and global approaches to the history of art, contemporary art and visual culture

C. Pavsek – documentary cinema, political cinema, German cinema, film theory  
J. Radul – performance, video, photography, sound and text, contemporary theory

P. Stella – acting, directing, playmaking, dramaturgy  
O. Underhill – composition, conducting, contemporary ensembles, music theatre, interdisciplinary collaboration, 20th century theory

C. Welsby – avant garde film and video making, photography and time-based gallery installations

J. Yoon – photo and video based installation, image and text, art in the public realm, contemporary theory

– feminist, post-colonial and diasporic discourses

\*joint appointment with communication

\*\*joint appointment with women's studies

### MFA Program

The program, leading to a master of fine arts (MFA) in interdisciplinary studies, provides advanced training in music, dance, theatre, film, and visual arts. It furthers cross-disciplinary research, technical skill and artistic creativity, and the development of critical awareness of the relatedness of the arts both in contemporary society and in an historical perspective. The MFA degree is the standard qualifying degree for teaching at the post-secondary level. Courses provide flexibility to accommodate individual differences in background and artistic goals, with emphasis on the production of creative interdisciplinary work. The program is full time and two years in duration. It cannot be pursued part-time and has a residency requirement due to the nature of the artistic practice.

### Admission Requirements

Applicants must hold a BFA, BA, BMus or BEd in one or more of the art disciplines, with a 3.0 CGPA or better. In special cases, a candidate may be admitted who does not satisfy this requirement but who either possesses comparable certification (an art school or conservatory diploma) or has exceptional experience as a practising artist.

Applicants must demonstrate creative competence with a high standing in music, dance, theatre, film, or visual art undergraduate courses, or substantial experience in these fields outside the university. For consideration by the admissions committee, applicants submit a work portfolio of audio or video tapes, scores, slides, films, plays or academic papers. Performing artists may be asked to audition.

Foreign students may be required to demonstrate proficiency in the English language, attained by scoring 570 or above in the Test of English as a Foreign Language.

### Degree Requirements

MFA candidates complete a minimum of 35 units, including 25 of course work and a project, which is the equivalent of 10 units. Normally, this project is an art presentation accompanied by appropriate documentation with an oral defence.

Students complete all of

FPA 811-5 Interdisciplinary Graduate Seminar I

FPA 812-5 Interdisciplinary Graduate Seminar II

FPA 813-5 Interdisciplinary Graduate Studio  
FPA 898-10 Master of Fine Arts Graduating Project

plus two of

FPA 883-5 Studio in Fine and Performing Arts I

FPA 885-5 Studio in Fine and Performing Arts II

FPA 887-5 Selected Topics in Fine and Performing Arts

FPA 889-5 Directed Study in Fine and Performing Arts

## School of Interactive Arts and Technology

Simon Fraser University Surrey, Central City,  
250–13450 102nd Avenue, Surrey, BC V3T 0A3,  
778.782.7499 Tel, 778.782.7488 Fax,  
www.sfu.ca/~siat/grad

#### Director

J. Bowes AB (Hamilton College), MSc (Syr),  
PhD (Mich State)

#### Graduate Program Chair

M. Hatala MSc, PhD (Kosice Tech)

#### Faculty and Areas of Research

For a complete list of faculty, see "School of Interactive Arts and Technology" on page 158.

A.N. Antle – child-centred design and evaluation of interactive technologies, mixed reality and location-based interaction models, play and informal learning in interactive environments, industry-based, human-centred design practice

L. Bartram – collaboration interfaces, perceptual issues in information visualization, methodologies for interface evaluation, and human interaction in complex systems

J. Bizzocchi – interactive narrative; critical analysis of interactive experience; the craft of game design; production aesthetics for large flat-screen video display; educational technology and distributed learning

J. Bowes – digital media and telecommunications policy; computer mediated communication and online commerce; technology transfer; minorities and media; history of technology

T.W. Calvert\* – animation and choreography of human figures; networked multimedia systems for learning; the design and evaluation of human-computer interfaces for complex systems; computer graphics

J. Dill\* – information visualization, visual analytics, design visualization, haptic rendering, intelligent graphical interfaces

S. DiPaola – collaborative knowledge systems; interactive art expression systems; facial and character systems for animation and real-time interactivity; alternative and social user interfaces; 3D interactive avatar and agent collaboration systems

H.I. Erhan – design cognition, computer-aided design, design requirements, component-based design, formal methods, software engineering

B.D. Fisher – interaction science cognitive systems, human-information discourse, visual analytics, games and simulations

C. Geisler – institutional transformation, changing faculty-to-faculty processes, collaborative systems design, analyzing language, rhetorical agency

D.J. Gromala – biopotentials, meditation and art, multiple levels of awareness, biomedicine, interface design, phenomenological philosophies of experience, critical analyses of interactive art, media and culture, medical visualization, qualitative research methods

M. Hatala – knowledge representation and knowledge management; ontologies and semantic web; intelligent information retrieval; organizational learning; online learning



P. Pasquier – multi-agent systems: artificial intelligence, artificial life, machine learning; metacreation: machines endowed with creative behavior; audio art: composition, sound design, sound spatialisation; performance and technology: theory and practice

A.D.N. Rajah – post-traditional media, sacred spaces: sacred art and digital technology, interfaces for navigating sacred content

B. Riecke – human multi-modal spatial cognition, spatial orientation, and navigation, enabling robust and effortless spatial orientation in virtual environments, self-motion perception, illusions, and simulation, perceptually oriented, multi-modal human-computer interfaces and human-centered, effective virtual reality simulations, multi-model, interactive art/dance performances

T. Schiphorst – authoring methodologies; human computer interaction; wearable technology; multi-modal interaction

M. Seif el-Nasr – interactive entertainment, expressive artificial intelligence systems, authored cinematic systems, computer and video game research

C. Shaw – virtual environments, 3D free-form surface design, two-handed 3D user interfaces, bioinformatics visualization, scientific visualization, information visualization, human-computer interaction, computer graphics

R. Wakkary – interaction design; multi-user interaction; design methods in interaction and games; collaborative authorship; digital culture and online content; online learning

R. Woodbury – design space exploration, parametric design, online interpretations, computer supported co-operative work, online learning

\*emeritus

## Program Goals

This program offers master's and doctoral degrees in art, design, media and information technology with particular expertise in the computational and interactive aspects of art, design, new media learning, business, computer games, cognition, performing arts, social science and cultural studies. The program is geared toward students who wish to learn about technology and how it is made and used.

The program has the quadruple objectives of: first, research and development of new computational technology in the context of complex human organizations and situations; second, research into the acts of designing, making, and managing technology; third, inquiry into and use of research methodologies that enable interdisciplinary collaboration and the development of new technologies; and fourth, application of new technologies in society and industry, particularly in creative areas of art, design, games and media.

## Degrees Offered

The program offers courses leading to an MA, MSc and PhD, and provides graduate study in diverse areas related to people, technology and society, especially the areas of art, design, games and knowledge management.

The following degrees, for those who were admitted in September 2003 or earlier, have been phased out: master of applied science (information technology); master of applied science (interactive arts)

## Fields of Study, Research, and Research Facilities

Faculty conduct research in a variety of areas including design, digital media, performance and media art, human-computer interaction, computer supported co-operative work, and information technology. Specific areas include collaborative

product development; computational design; design science; digital game design; digital storytelling; human figure, face and character animation; information visualization; interaction design; interactive narrative; knowledge representation and management; knowledge visualization; media and telecommunication policy; performance in mediated environments; scientific visualization; visual analytics; and ubiquitous computing and wearable computing.

Faculty research is supported by NSERC, SSHRC, the Networks of Centres of Excellence, Canarie, Heritage Canada, the Canadian Foundation for Innovation, the BC Knowledge Development Fund, BCcampus and others.

## Research Laboratories

The school operates an extensive suite of research laboratories in new facilities. It dedicates the best spaces in these facilities as working space for graduate students. The facilities include the following.

### *The Usability Lab*

This lab supports research in user interfaces, user response, internet structure, online repositories and visualization. Facilities include head and eye tracking equipment, servers, terabyte storage arrays, software, displays, and desktop and laptop computers.

### *The Black Box*

This lab provides the ability to stage and measure human motion and performance. It includes a theatre with resilient floors, blackout curtains, lighting, sound, motion capture and green screen. Ancillary equipment includes cameras, software, servers and desktop computers.

### *Rapid Prototyping Lab*

This new lab is developing a suite of tools and fixtures for rapid creation of design prototypes. It includes a 3D printer, a laser cutter, an industrial sewing machine, large format plotters, electronics kits and a collection of power and hand tools.

### *Interactive System Prototyping Lab*

Many researchers in SIAT build large scale prototypes. This lab provides high resolution displays and projectors, numerous input and sensing devices, and desktop and laptop computers.

### *Video Lab*

This is a small lab devoted to research in video studies, production and editing. It provides video cameras, mixing hardware and software and acoustically isolated rooms.

### *InfoNet Media Lab*

The lab houses a computational environment for the creation, usage, and sharing of multi-modal information. It supports a 128 node Beowulf cluster, instrumentation and prototyping software, high resolution displays, and desktop and laptop computers.

### *Shared Virtual Environments Lab*

The lab supports research into telepresence, and the use of computing environments to share activity over networks. The lab houses a two-wall cave, several stereoscopic displays, access grid conferencing facilities, and a very high resolution digitally enabled conference table.

The Video Theatre supports research in the audience reception of media. It houses a high-resolution projector, a 102" screen, multimedia recording and playback systems and a 3000W stereo sound system.

### *Simon Fraser University Libraries*

Specialized reference services and specialist librarians for the graduate program are available.

### *Regional Opportunities*

Ties with high technology industry and other Simon Fraser University programs offer additional facilities and synergies for graduate level research.

## Admission Requirements

There will be annual admission into the program with the possibility of early or out-of-cycle admissions in special cases.

The minimum standards will be those of Simon Fraser University, as described in the *Graduate General Regulations* (page 219), augmented by the following specific requirements.

It is our aim to admit groups of students with diverse backgrounds, across the broad areas in which our faculty have disciplinary expertise. The following admission requirements are designed to encourage such diversity while setting minimum standards for acceptance into the program.

Master's students will be admitted to study for either the MA or MSc degree. Students may articulate between the MA and MSc degrees by meeting the admission and program requirements of the degree to which they articulate and with the approval of the graduate program committee. A student may make one application for articulation.

## Minimum Standard Entrance Requirements Specific to the MA and MSc Programs

- an undergraduate degree in a field related to the proposed program of study. For example: BSc computer science, BAsC engineering (electrical, communications, computer engineering), BA or BSc in education, management, economics or communications, BFA in art, design or performing arts, BA in art, art history, architecture, linguistics, psychology or philosophy, BArch, BLArch, BID or
- an undergraduate degree in another, related discipline. Applicants must establish the relationship between the discipline in which they hold their previous degree or degrees and this program; and how they would benefit from this program.
- for MSc applicants, a record of substantial university course work in scientific and/or technological areas.
- a minimum cumulative GPA of 3.0 or better at a Canadian university, or equivalent, for the undergraduate degree.
- two reference letters from suitably qualified persons.

## Minimum Standard Entrance Requirements Specific to the PhD Program

- a graduate degree in a field related to the proposed program of study, e.g. MSc computer science, MASc engineering (electrical, communications, computer engineering), MA or MSc in education, management, or economics, communications, MFA in art, design or performing arts, MA in art, art history, architecture, linguistics, psychology or philosophy, MArch, MLArch or
- a graduate degree in another, related discipline. Applicants are required to establish: the relationship between the discipline in which they hold their previous degree or degrees and this program; and how they would benefit from this program.
- or
- an undergraduate degree in one of the two categories above. Applicants are required to demonstrate both high academic standing (3.5 GPA or better at a Canadian university, or equivalent), for the undergraduate degree, and evidence of research aptitude and accomplishment.
- a minimum cumulative GPA of 3.0 or better at a Canadian university, or equivalent, for the master's degree.
- three reference letters each from a suitably qualified person.

## Additional Admission Requirements for the MA, MSc and PhD Programs

### English Language Proficiency

Students must demonstrate proficiency in the English language through one of the following means.

- a previous undergraduate or graduate degree completed at a university where English is the applicant's primary language of instruction
- a minimum score of 88 with a minimum of 20 in each category on internet based TOEFL
- a minimum score of 570 on the paper-based TOEFL test with a minimum TWE score of 5
- a minimum score of 230 on the computer-based TOEFL test with a minimum TWE score of 5

### Portfolio/Interview

Candidates who are considered for admission may be required to submit a work portfolio and/or be required to attend a personal or telephone interview during the latter stages of the admission process.

### Advising and Supervision

Student supervision will comply with graduate general regulations section 1.6 *Supervision*. Students entering the program will be assigned an interim advisor. The interim advisor has two main tasks: advising the student on issues related to study within the program and assisting the student in identifying and approaching potential senior supervisors. There is no requirement that the interim advisor has a role in supervision once the senior supervisor is approved.

The normal size of MA and MSc supervisory committees is two members. The normal size of a PhD supervisory committee is two or three members.

## MA, MSc and PhD Programs

### Degree Requirements

The primary requirement for the MA, MSc and PhD degrees is the thesis. The course requirements are aimed to support the student's thesis research. Students fulfil the following requirements to complete their degree. The MA, MSc and PhD requirements have common components, and are thus presented together. As requirements differ, they are listed respectively for each degree.

### Required Courses

Students complete

IAT 800-3 Foundations of Computational Art and Design

and one of

IAT 801-3 Qualitative Research Methods and Design

IAT 802-3 Quantitative Research Methods and Design

IAT 800 is a mandatory course, but may be waived for those students with sufficient formal educational background in art and design computation.

### Core Courses

Master's students complete at least four additional courses as described below.

MA students complete two courses from the following.

IAT 810-3 New Media

IAT 811-3 Computational Poetics

IAT 812-3 Cognition, Learning and Collaboration

IAT 813-3 Artificial Intelligence in Computational Art and Design

IAT 814-3 Knowledge Visualization and Communication

MSc students complete two courses from the following.

IAT 812-3 Cognition, Learning and Collaboration

IAT 813-3 Artificial Intelligence in Computational Art and Design

IAT 814-3 Knowledge Visualization and Communication

PhD students complete at least five additional courses including at least two from the following.

IAT 810-3 New Media

IAT 811-3 Computational Poetics

IAT 812-3 Cognition, Learning and Collaboration

IAT 813-3 Artificial Intelligence in Computational Art and Design

IAT 814-3 Knowledge Visualization and Communication

### Electives, Special Topics and Directed Readings

Elective offerings are expanding as the faculty complement grows. Several new special topics courses will be offered that reflect the interest and expertise of new faculty. Course offerings will be listed on the program's website ([www.siat.sfu.ca/grad](http://www.siat.sfu.ca/grad)) as they become available.

Master's and PhD students complete two courses from electives, special topics and directed readings courses. Required or core courses that are not completed as part of the degree requirements may also be completed as electives. Subject to supervisory committee approval and graduate program committee approval, students may fulfil part of these requirements through other appropriate graduate courses at Simon Fraser University or elsewhere (the latter subject to Simon Fraser University rules on external courses). Normally, all students complete at least one course towards these requirements as either an elective or special topics offered within the program. For determining degree requirements in core, elective, special topics and directed readings categories, the number of courses with at least three units each shall be used. At least one elective must be a research methods course appropriate to the student's course of study.

Special topics courses offered in the program will be approved by the graduate program committee to essentially the same criteria required for approval of a new elective. At the time of approval, each special topics course will be evaluated for suitability for study towards the master's or doctoral degree and the results of such evaluation will be noted in the course approval and course outline. At the time of approval, each special topics course will be evaluated for suitability for fulfilling the program's research methods requirement and the results of such evaluation will be noted in the course approval and course outline.

Directed readings are seminar or tutorial experiences that develop special research interests in depth and with faculty supervision. Students should not expect to complete a directed readings course where there is a substantively comparable course offered at Simon Fraser University. Directed readings should be distinct from the work to be undertaken towards the master's thesis. Normally, directed readings should not be completed under the supervision of a student's senior supervisor. Normally a master's student would complete at most one, and for doctoral students at most two, directed readings course during his or her degree. Directed readings offered within the program will be approved by the graduate program committee to essentially the same criteria required for approval of a new elective. At the time of approval, a directed readings course may be approved as fulfilling the program's research methods requirement.

### MSc Elective Requirements

Students complete at least one course from the following

IAT 840-3 Models of Networked Practice

IAT 842-3 Theory and Design of Games

IAT 844-3 Spatial Computing

IAT 845-3 Methods for Research into Technological Systems

plus any special topics course or any directed readings course approved by the graduate program committee for study towards the MSc degree.

The following may be used to satisfy elective requirements, subject to the MSc elective requirements above. For MA and PhD students, there is no elective requirement.

IAT 830-3 Learning Design and Media

IAT 831-3 Encoding Media Practice

IAT 832-3 Exploring Interactivity

IAT 833-3 Embodiment and Electronic Performance

IAT 840-3 Models of Networked Practice

IAT 842-3 Theory and Design of Games

IAT 844-3 Spatial Computing

IAT 845-3 Methods for Research into Technological Systems

IAT 881-3 Special Topics I

IAT 882-3 Special Topics II

IAT 883-3 Special Topics III

IAT 884-3 Special Topics IV

IAT 885-3 Special Topics V

IAT 886-3 Special Topics VI

IAT 887-3 Special Topics VII

IAT 888-3 Special Topics VIII

IAT 871-3 Directed Reading I

IAT 872-3 Directed Reading II

IAT 873-3 Directed Reading III

### Designated Research Methods Courses

The following research methods courses satisfy the research methods requirement in the elective course requirements. This course requirement must be relevant to the student's thesis work and be approved by the student's supervisor and the graduate program committee as being appropriate. Courses external to SIAT may also be used to satisfy this requirement and must be approved by the student's supervisory committee and the graduate program committee.

IAT 833-3 Embodiment and Electronic Performance

IAT 834-3 Mixed Methods in Design Research

IAT 845-3 Methods for Research into Technological Systems

### IAT 805-0 Research Colloquium

The research colloquium is an important part of the program. Master's students present in one seminar, and PhD students present two seminars and all are expected to attend a large majority of the seminars for at least two academic terms.

### Requirements Specific to MA and MSc Degrees

Master's students produce and defend a thesis as part of degree requirements. All Simon Fraser University regulations on thesis form and examination process apply. The standards of scholarship (quality of work) for the master's degree are no less than those for the doctorate, except the scale, scope and originality of the thesis may be less. Commonly, the master's thesis shows refinement of a developed scholarly specialization, a useful replication of established note and, in some cases, a pretesting or prototype of supporting ideas for eventual PhD research.

#### IAT 897-6 MA Thesis

Students who are working on their master of arts thesis enrol in this course. This course will not count toward the course work requirements.

#### IAT 898-6 MSc Thesis

Students who are working on their master of science thesis will enrol in this course. This course will not count towards the course work requirements.

### Requirements Specific to the PhD Degree

#### PhD Comprehensive Examination

The PhD degree requires a comprehensive examination aimed at testing for achievement in interdisciplinarity, breadth of knowledge, depth of knowledge, topic focus and scholarly skill.

With the consent of their Supervisory Committee, students may sit the comprehensive examination following completion of required course work. Upon

passing, the student will be admitted to full degree candidacy. The examination may be retaken once.

As part of the preparation to undertake the comprehensive examination, the student submits, to the supervisory committee, a comprehensive annotated bibliography of readings used throughout course work, and readings related to the proposed thesis topic. The senior supervisor will inform the graduate program committee of the supervisory committee's consent to write the examination and will provide a copy of the annotated bibliography. Upon receipt of this from the senior supervisor, the graduate program committee will form an examination committee comprising the supervisory committee, the graduate program chair or designate, and one other member of faculty in the School who is eligible to act as a senior supervisor. The graduate program chair or designate shall chair the examination committee.

The examination will have three sections. The first will test for breadth of knowledge within the student's course of study. The second will test for knowledge of the proposed thesis topic. The third will test for knowledge of and skill with pertinent research methodology. At least two of the sections will have a required archival component. The exam will have an oral component that will test for all three sections.

The examining committee will refer to the bibliography when preparing the exam. The exam process should not exceed one term from the date of notification to the graduate program committee of the consent to write the examination. This may be longer should a student be required to retake the examination.

Specific guidelines for these examinations are available from the graduate program assistant.

#### *PhD Proposal*

The PhD degree requires a dissertation proposal aimed at collegial review of the proposed work, development of research formulation and presentation skills, and approval of the dissertation work by the supervisory committee and the graduate program chair. The approval of the graduate program chair is largely for oversight issues, for example, required ethics clearances. The dissertation proposal has two components: a research prospectus and a public event with timely notification given to the campus community.

#### *PhD Dissertation*

PhD candidates produce and defend a dissertation as part of degree requirements. All Simon Fraser University regulations on thesis form and examination process apply. A successful dissertation demonstrates an original contribution to a student's field of study. The standard of work expected is that of peer-reviewed work by accomplished scholars in their specialization. Candidates are encouraged to consider the professional and career implications of this major scholarly work.

IAT 899-6 PhD Dissertation

Students who are working on their PhD dissertation will enrol in this course. This course will not count toward the course work requirements. PhD candidate status is neither required for nor implied by enrolment in this course.

*PhD students who have completed a SIAT MA or MSc*  
PhD students who have completed a master's (MA or MSc) degree within the program are not required to complete IAT 800, 801 or 802 as part of their PhD program. Instead, these students may apply to the graduate program committee for a reduction in course work aimed at breadth and scholarly skill. Students complete at least one core course and three electives.

## Co-operative Education

On an optional basis and with graduate program committee approval, students may participate in co-operative education by placement in a government or private research agency to gain practical experience in their thesis or dissertation area. The co-op option is separate from course work and serves as an adjunct to the thesis/dissertation process.

Co-operative education provides opportunities to gain practical research experience in external settings. Enrolment requires successful completion of at least two courses within the program, good academic standing, no deferred grades and approval of the graduate program committee.

This option is separate from course work and serves as an adjunct to the thesis/dissertation process. Students are responsible for making all external arrangements and pay the co-op enrolment fee as listed in the Graduate Fee Schedule (see "Tuition Fee Schedule 2009 – 2010" on page 227).

The following co-op courses are available.

IAT 861-0 Practicum I  
IAT 862-0 Practicum II

## Publishing Program

3576 Simon Fraser University Vancouver, 515 West Hastings Street, Vancouver, BC, V6B 5K3,  
778.782.5242 Tel, 778.782.5239 Fax,  
www.ccsf.sfu.ca

#### *Director*

R.M. Lorimer BA, MA (Manit), PhD (Tor)

#### *Professor*

R.M. Lorimer BA, MA (Manit), PhD (Tor) – publishing policy

#### *Assistant Professor*

J. Maxwell BA (Br Col), MPub (S Fraser), PhD (Br Col) – technology

#### *Senior Lecturers*

R. Dosi BJourn (MMoreno), MPub (S Fraser) – design  
M. Schendlinger – editing

#### *Associate Members*

A. Cowan, Continuing Studies – publishing education, editing and production  
L. Copeland, Library  
C. Gerson, English – history of Canadian publishing  
M. Jordan, Library  
B. Owen, Library – information technology  
R.K. Smith, Communication – information technology

#### *Adjunct Faculty*

M. Benjamin BA (Ott) – publishing consultant and writer  
T. Best BA (Tor) – vice president marketing, HB Fenn and Company Limited  
R. Bringham BA (Indiana), MFA (Br Col) – author  
P. Bruce BA (Car), MA (Tor) – publisher, Phyllis Bruce Books  
K. Cochrane BA (Qu) – associate publisher, Doubleday Canada  
P. Cocking BA (Br Col) – design director, Douglas & McIntyre  
D. Cooke BA (Car) – literary agent and owner, The Cooke Agency  
J. David BA (WOnt), MA (Windsor) – publisher, ECW Press  
J.J. Douglas LLD (S Fraser) – retired publisher, Douglas and McIntyre  
N. Flight BA (Denison), MA (Bryn Mawr) – associate publisher, Greystone  
R. Hancox Dip (Regent St), PMD, Neiman Fellow (Harv), Professional Fellow  
K. Hanson BA (Alta), MBA (Tor) – president, Simon and Schuster Canada

D. Kent – president and CEO, Harper Collins Canada  
A. MacDougall – president, Raincoast Books  
R. McCullough – publisher, Whitecap Books Limited  
P. Milroy BA (Ont) – publisher, UBC Press  
S. Osborne, BA (Br Col) – publisher, Geist Magazine  
C. Riggs BA (Saint Mary's, Can), MPub (S Fraser) – partner, Turner-Riggs Workspace  
C. Scott Richardson BA (Tor) – vice president and creative director, Canadian publishing, Random House Canada  
M. Schendlinger – editing and magazine publishing  
M. Tambllyn BA (WLaur), MBA (WOnt) – sales data analysis  
R. Touchie BA (Windsor), MA (Br Col) – publishing management  
P. Whitney, BA (Sask), MLS (Br Col) – chief librarian, Vancouver Public Library  
J. Willinksy BA (Laurentian), MEd (Tor) PhD (Dal) – professor, Stanford University

#### *Advisor*

Ms. J. Ray BA (S Fraser), 3576 Simon Fraser University Vancouver, 778.782.5242, jray@sfu.ca

## MPub Program

This program leads to a master of publishing degree (MPub) and is designed for those in, or intending to enter, the publishing industry. It is composed of a set of courses, an internship, and a project report, and encompasses a range of publishing activities including business, design, editing and multimedia.

### Admission Requirements

Applicants require a bachelor's degree with a minimum 3.0 grade point average from a recognized university or equivalent. In addition, applicants must

- have some demonstrated familiarity with the publishing industry
- be familiar with the operation of both Apple and IBM compatible microcomputers
- demonstrate a suitable level of competence in editing and proofreading
- be familiar with the major concepts of marketing and accounting
- demonstrate a suitable level of competence in English composition

Entering students are expected to have a minimum knowledge of publishing which will be assessed through an evaluation of documents and experience, and in some cases, interviews and examinations. Those without the necessary knowledge, understanding and skills must successfully complete the following courses or their equivalents.

BUS 251-3 Financial Accounting I  
BUS 254-3 Managerial Accounting I  
BUS 343-3 Introduction to Marketing  
CMNS 371-4 The Structure of the Book Publishing Industry in Canada  
CMNS 372-4 The Publishing Process

The following course is valuable background as a foundation for editing.  
ENGL 375-4 Studies in Rhetoric

### Satisfactory Performance

The progress of each student is assessed at the end of each term. A course grade of less than B is considered unsatisfactory. Any student who obtains a grade of less than B in two or more courses may be required to withdraw from the program.

### Degree Requirements

#### **Course Work**

Students complete 37 units in addition to an internship and project report. The curriculum is composed of courses offered exclusively within the program. The director may recommend that some students substitute courses from Simon Fraser University or

other institutions, and/or experience and demonstrate expertise for program courses.

**Internship and Project Report**

A key component is an internship and project which integrates the knowledge the student has gained with the demands of an applied setting. This internship is in the workplace, typically in industry, public institutions or government. An appropriate level of documentation and reporting is required. During the Internship, which generally last four months, the student receives academic supervision as required from the student's senior supervisor. Day-to-day

supervision is by designated industry supervisors who have appropriate qualifications and will be appointed by the University. In very small companies, alternate arrangements may be made.

The internship will focus on a specific student initiated project, by one or more supervisory committee members or by the industry supervisor's employer.

The student submits an outline defining the project scope, plans for documentation and reporting, anticipated activities, schedule and conclusion. The outline is approved by the supervisory committee and program director. Commitment of the company or

institution, the industry supervisor and the University will be formalized by a letter exchange.

The student produces two reports: a work report which is a student work appraisal; and a project report which investigates a particular problem. The latter serves as a project record and interpretation.

The supervisory committee and director assess the project on the conduct of the project, work and report quality. There is no oral exam. however, a project report will be submitted (see "1.11 Publication of Thesis" on page 225).

# Faculty of Education

8655 Education Building, 778.782.4787 Tel,  
778.782.4320 Fax, [www.educ.sfu.ca/gradprogs](http://www.educ.sfu.ca/gradprogs)

## Dean

K.C. Magnusson BEd, MEd (Regina), PhD (Alta)

## Associate Deans

S.C. de Castell BA (Sir G Wms), MA, PhD (Lond)

D. Paterson BEd (Alta), MA, PhD (Br Col)

## Faculty and areas of research

See "Faculty of Education" on page 199 for a complete list of faculty.

C.L. Amundsen – teaching and learning technology use in higher education; faculty development

H. Bai – philosophy of education; humanities; social, moral philosophy; epistemology; ecology; Asian philosophies; Zen arts

R. Barrow – philosophy of education; moral philosophy; curriculum; teacher education; place of philosophy in empirical educational research and teacher education

K. Beck – international education, globalization, postcolonial thought, feminist principles, race, diversity and multicultural education, curriculum and pedagogy in higher education, ethics of care

C.W. Bingham – philosophy of education; literary theory; curriculum; the psyche; teaching as a life practice; inter-human recognition; literary representations of education, hermeneutics, deconstruction, queer theory

S. Blenkinsop – philosophy of education; imagination in teaching and learning; ecology; relational epistemologies; theories of place; existentialism; continental philosophy

S.R. Campbell – historical and psychological development of mathematical thinking from an embodied perspective informed by Kant, Husserl, and Merleau-Ponty; methods of psychophysics and cognitive neuroscience as a means for operationalising affective and cognitive models of math anxiety and concept formation

W. Cassidy – curriculum and instruction; citizenship/law-related education; social justice and human rights; the ethics of care; fostering inclusive educational environments for 'at risk' marginalized youth; cyberbullying

A. Chinnery – teacher education, philosophy of education, moral education, curriculum theory, social justice education

D.H. Dagenais – bilingualism; socio-linguistics; literacy; ethnography; educational change; language learning in minority and majority contexts; literacy practices at home and at school

S.C. de Castell – educational media studies, non-formal learning environments; multi-modal, study of emerging methods of models of educational communications, education, gaming and gender

K. Egan – Canada Research Chair; educational theory; intellectual development; the nature and development of imagination and its role in education

L. Fels – arts-based research; writing as research and presentation; drama/theatre education; arts as social action; performance and technology; on-line publishing; curriculum and evaluation; professional development in education

M. Fettes – epistemological, sociopolitical and pragmatic aspects of educational reform; theoretical aspects of modernity and post-modernity; the history and sociology of linguistic and educational thought

R. Frie – psychotherapy, subjectivity and inter-subjectivity in modern philosophy, psychoanalysis

I. Geva-May – policy studies, policy analysis, policy evaluation, comparative policies, public policy

instruction and international development of public policy programs, political cultures impact on policy-making, disciplinary focus on policy of higher education, immigration, health care

P.P. Grimmett – teacher education and teacher development; curriculum theory and implementation; educational leadership; teacher research; reflective practice; cultures of teaching

H. Han – TESL/FL, applied linguistics, sociolinguistics, critical discourse analysis, language ideology and practices

M.J. Hoskyn – development of executive function in young children, neurophysiological processes involved with learning to read among preschoolers and school-aged children, learning disabilities, early intervention

R. Ilieva – teaching and learning English as an additional language, sociocultural, poststructural, critical and psychoanalytical perspective on language learning, teaching and curriculum, culture(s) in language education, teacher identities, international education

M. Jacquet – intercultural and multicultural education, bilingual education teacher in-service training related to diversity, cultural and religious accommodation in school, integration of African francophone students

L. Kanevsky – giftedness and gifted learners, socio-cultural and Vygotskian approaches to learning and development

D. Kaufman – teaching and learning with technology, instructional methods in higher education, research and evaluation methods, medical education

P.A. Keats – witnessing and vicariously witnessing trauma; secondary traumatization; acute and post-traumatic stress; expressive trauma interventions, visual research methods

V. Kelly – holistic education, indigenous education, the integration of the arts in education and art therapy, aesthetic ways of knowing and the imagination, indigenous knowledge, arts-based research methodologies

J. LaBrie – post-secondary education leadership; role of agenda setting in policy development; funding models in post-secondary education; strategic planning; international program development and curricular integration

L. LaRocque – community, collaboration, ethic of caring, leadership, district-school relations, implementation of change, school reform, educational policy, teacher education

L.J. Le Mare – children's socio-emotional development in family and school contexts; early childhood education; impact of early adversity

D.A. Laitsch – the use and misuse of research in policymaking and issue advocacy; policy issues related to market-based education reform efforts; the impact of high stakes accountability and assessment programs on educational systems

P. Liljedahl – instances of creativity, insight, and discovery in mathematics; mathematics and affect, professional growth of teachers, mathematical problem-solving, numeracy, instructional design

G.M. Ling – cultural theory, philosophy and curriculum theory, art and literature

M.J. MacDonald – early childhood education; language and literacy development; intergenerational and family literacy; pedagogical documentation; negotiated curriculum; early childhood environments

A.M. MacKinnon – science education; teacher education; philosophy of science; children's conceptual development in science; the nature and role of practicum experiences in teacher development

G. Madoc-Jones – language arts; hermeneutics; philosophy of education; poetry; history of literacy; BC literature

C.M. Mamchur – language arts education; enhancing teacher and student self-concept and developing curriculum to do that; teaching and learning style models; Jungian psychological type and perceptual psychology measures (pre and in-service), archetypes and language acquisition

E. Marshall – representations of gender and sexuality in children's and young adult's literature, constructions of girlhood and study textual representations in a range of cultural texts produced/read by youth

S. Marshall – academic literacy; sociolinguistics; multilingualism; language learning

D. Moore – applied linguistics, sociolinguistics, bilingualism and plurilingualism; pluriliteracy; immigration; language acquisition and second language learning; code-switching

J. Nesbit – educational psychology; educational technology; self-regulated learning with multimedia; cognitive tools; learning resource evaluation; adaptive learning systems; research methods

P. Neufeld – general inter-literacy development and instruction; learning disabilities; and English-as-a-second-language reading; the social construction of disability and risk

M. Nilson – post-secondary education governance, finance, access, participation, and policy, leadership, program development, assessment, evaluation

D.K. O'Neill – educational technology; inquiry learning in K-12 history and science; computer-supported collaborative learning (CSCL) in K-12; tele-mentoring (on-line mentoring), relationships to support inquiry-oriented teaching

D. Paterson – school counselling; developmental counselling; counselling in the elementary school; school-based support teams; counselling in groups

M. Pidgeon – higher education, aboriginal post-secondary completion and retention, student services, methodology, critical policy analysis

N. Popadiuk – international students, cultural transitions and adjustment, culturally-competent counselling, interpersonal relationships, agency, post-secondary, school counselling

S. Richmond – arts education; aesthetics and arts theory; philosophical and social foundations of education; globalization; arts-based research; photography; teacher education

C. Sabatier – French education, multilingualism pedagogy; socio-linguistic research on school and immigration

M.J. Schmidt – K-12 research in the areas of educational reform; classroom assessment; ethnography; education of minorities; intersection of parenting and schools; educational leadership

Ö. Sensoy – study of social power in relation to education and schooling, encompassing fields such as critical pedagogy, critical multicultural education, social education, popular culture, media literacy, cultural studies, anti-oppression oriented theories, visual research methods

Y. Senyshyn – philosophy of education and language; philosophical analysis applied to creative live musical performance

N. Sinclair – the use of technology in mathematics education, role of the aesthetic in mathematics learning, teaching and learning geometry

S.J. Smith – human sciences; issues related to physical education; outdoor education and health education; physical education, phenomenological

inquiry, pedagogical theory, and children's play interactions

C. Snowber – movement education; arts-based educational research; physical education; arts in education; phenomenological curriculum research; embodiment and pedagogy; writing and the body  
L. Sterling – program evaluation in aboriginal health and labor markets; First Nations curriculum; impact of residential schools; curriculum development for aboriginal social work programs

J.H. Sugarman – the psychology of personhood, selfhood, and human agency, sociocultural perspectives on psychological development, theory and philosophy of educational psychology  
K. Toohey – English as a second foreign language; multi-cultural education; native Indian education; bilingual education; bilingual education for minority language students

S. Vamos – health education; teacher preparation in health education; curriculum development in health education; co-ordinated school health programs; adolescent health behaviours and attitudes.

D. van der Wey – coalition politics, indigenous education, anti-oppression education, aboriginal literature and pedagogy, curriculum and pedagogy

P.H. Winne – educational psychology; self-regulated learning; learning tactics and strategies; metacognition; software learning technologies that support learning

A.F. Wise – educational technology, online teaching and learning environments, computer-supported collaborative learning (CSCL), computer-mediated communication, designing online conversation spaces, professional education and lifelong learning in formal and informal environments, education technology and international development

D. Zandvliet – learning environments, science and environmental education, education and technology; affects and effects of new ICT's on physical and psychosocial learning environments

R. Zazkis – mathematics education; teacher's understanding of mathematics

## Graduate Programs

8655 Education Building, 778.782.3984 Tel, 778.782.4320 Fax, [www.educ.sfu.ca/gradprogs](http://www.educ.sfu.ca/gradprogs)

Graduate Program Director  
H. Bai BA (Calg), PhD (Br Col)

### Graduate Degrees Offered

master of arts  
master of education  
master of science  
doctor of education  
doctor of philosophy  
doctor of philosophy under special arrangements

The Faculty of Education offers graduate programs leading to MEd, MA, MSc, EdD and PhD degrees in select fields of scholarly and professional studies. The nature of and requirements for degrees vary by degree and by field of study.

The MEd is a professional degree signifying advanced knowledge about and advanced training in educational practice. Minimal requirements for MEd course work/comprehensive exam programs are the completion of 31 units in required and elective courses, plus a final comprehensive examination (five units). The content of EDUC 883 MEd Comprehensive Examination varies by program.

In the individual program, the MEd culminates in a project that materially and substantially relates theory to practice or that systematically examines a significant problem in education. Students enrolled in the MEd program that includes a project must successfully complete a minimum of 33 units divided

between courses (at least 28 units) and EDUC 881 Project (five units).

The MA, MSc, EdD and PhD degrees signify advanced knowledge in a field of specialization and advanced competence in conducting significant and original research in education.

Minimum requirements for the MA and MSc degrees are successful completion of 33 units of required and elective graduate courses (at least 23 units) and EDUC 898 Master's Thesis (10 units).

Minimum requirements for the PhD are successful completion of 35 units beyond graduate requirements for an MA or MSc, consisting of 20 units divided among required and elective courses, comprehensive examination (five units) and EDUC 899 Doctoral Thesis (10 units).

The EdD in educational leadership is a professional degree signifying the acquisition of advanced knowledge and expertise in educational leadership. Minimum requirements are successful completion of 40 units of graduate work, consisting of 25 units divided among required and elective courses, a comprehensive examination (five units), and EDUC 899 Doctoral Thesis (10 units).

### Admission Requirements

See "1.3 Admission" on page 219 of the *Graduate General Regulations* for University admission requirements. In exceptional circumstances, applicants who do not meet these requirements may be considered if superior scholarly or professional achievement is demonstrated.

All applications are reviewed once a year. Completed applications to the master in counselling psychology program must be received by January 15. Completed applications to all other master's programs must be received by January 15. Completed applications to PhD programs must be received by January 15. Individual master's program applicants (see below) are urged to begin the application process well in advance of this deadline.

Admission is granted to a specific degree and to a particular program or specialization. Admission decisions are available by March 15. Application information is available November 15 via the web.

Please contact MEd Community Graduate and EdD programs directly for deadlines.

### MA, MEd, MSc Program Information

778.782.3984 Tel, 778.782.4320 Fax, [educmasters@sfu.ca](mailto:educmasters@sfu.ca)

### PhD Program Information

778.782.4787 Tel, 778.782.4320 Fax, [educdoc@sfu.ca](mailto:educdoc@sfu.ca)

### MEd Community Graduate Program Information

778.782.5951 Tel, 778.782.8119 Fax, [cpmed@sfu.ca](mailto:cpmed@sfu.ca)

### EdD Program Information

778.782.8099 Tel, 778.782.8119 Fax, [educedd@sfu.ca](mailto:educedd@sfu.ca)

### Supervision

A pro-tem advisor, who is appointed by the director of graduate programs upon admission, offers counsel regarding elective courses and other matters and, in those programs requiring a project or thesis, about selecting a committee to supervise this work. For additional information about supervisory committees, refer to "1.6 Supervision" on page 222 of the *Graduate General Regulations*.

### Master's Programs

The MA and MSc degrees signify the acquisition of advanced knowledge in the student's field of

specialization and competence in conducting significant and original research in education. Graduate programs leading to these degrees culminate with a master's thesis (EDUC 898).

The MEd is a professional degree signifying advanced knowledge and training in educational practice. All MEd programs, except an individual program, culminate with a comprehensive exam (EDUC 883). In an individual program, a project (EDUC 881) is undertaken that materially and substantially relates theory to practice or that examines a significant education problem.

### MEd Community Graduate Programs – Two Year Option

MEd programs are for practicing educators who wish to improve abilities to critically read, evaluate and integrate educational theory and research.

Two year MEd programs in educational leadership and in curriculum and instruction, offered in communities throughout the province, focus on a theme that integrates scholarly inquiry with focal interests and professional practice needs. During fall and spring terms, classes normally are scheduled every second weekend where the program is situated. In the summer terms, students typically attend classes on the Burnaby campus in July.

School districts, educational institutions, groups and individuals interested in an MEd community graduate program should contact the office at 778.782.5951.

### Field Programs – Three Year Option

A three year option of the MEd focuses on educational practice and builds on the graduate diploma in advanced professional studies in education. This option admits students who are enrolled in the two year graduate diploma and provides for a third study year leading to the MEd in educational practice. Contact Field Programs, 778.782.4892 Tel, 778.782.5882 Fax, [edprgpa@sfu.ca](mailto:edprgpa@sfu.ca), [www.educ.ca/fp](http://www.educ.ca/fp).

### Residence Requirements

See "1.7 Residence and Course Requirements" on page 222.

### Research Competence Requirement

Master's students must demonstrate research competence that is appropriate to their program or program specialization to the supervisory committee's satisfaction. See "1.7.2 Residence Requirement for the Master's Degree" on page 223.

### MEd Comprehensive Examinations

All MEd candidates, except those in an individual program, must complete a comprehensive exam by enrolling in EDUC 883. Normally, this occurs in the term in which course requirements are completed or in the immediately following term. Students are advised to observe deadlines for adding courses in planning the term in which they enrol in EDUC 883.

### MEd Project

Available only to students in an individual program.

### MA and MSc Thesis

Normally, before the fifth course, a master's thesis research plan is presented to the tenured or tenure track member of the faculty whom the student proposes to be senior supervisor. The senior supervisor and at least one other faculty member chosen in consultation with the senior supervisor constitutes the supervisory committee and the student proceeds to the thesis. The master's thesis is examined as prescribed in the *Graduate General Regulations* ("1.9 Preparation for Examinations" on page 224 and "1.10 Examinations" on page 225).

## Programs of Study

### Arts Education

This program leads to a master of education course work/comprehensive exam (MEd) or MA degree. The MEd requires 35 units of course work plus a comprehensive exam while the MA requires 25 units plus a thesis.

#### Core Courses

Students complete all of  
 EDUC 843-5 Embodiment and Curriculum Inquiry  
 EDUC 848-5 Ideas and Issues in Aesthetic Education  
 EDUC 849-5 Artists, Society and Arts Education  
 EDUC 850-5 Creativity and Education  
 EDUC 852-5 Education and Dramatic Art  
 EDUC 868-5 Curriculum Theory and Art Education  
 EDUC 869-5 Music Education as Thinking in Sound

All students enter the program through the MEd and may move to the MA after completing four courses with faculty approval. MA students complete a minimum of five courses from the list. Other courses may be required depending on thesis interest.

#### Comprehensive Examination/Thesis

A final comprehensive exam is required for MEd students. A thesis is required for MA students.

### Counselling Psychology

This program leads to an MA or MEd degree. The MA program is for students interested in careers as counsellors in schools, colleges, and community agencies. Students pursue a general program with specialized course and field work opportunities. Counselling MA students complete a minimum of 40 units of course work and a thesis plus the following.

#### MA Program

##### Core Courses

MA students complete all of  
 EDUC 799-3 Supervised Counselling Clinic I  
 EDUC 800-3 Supervised Counselling Clinic II  
 EDUC 801-3 Counselling Practicum I  
 EDUC 802-3 Counselling Practicum II  
 EDUC 862-4 Individual Assessment in Counselling  
 EDUC 870-4 Theories of Counselling  
 EDUC 872-3 Ethics in Counselling Psychology  
 EDUC 874-5 Counselling Skills and Strategies  
 EDUC 878-5 Group Counselling  
 EDUC 898-10 Master's Thesis

##### Methodology Course

MA students must complete one methodology research course selected from the list below in consultation with the senior supervisor.

EDUC 863-5 Quantitative Methods in Educational Research  
 EDUC 864-5 Research Designs in Education  
 EDUC 866-5 Advanced Qualitative Research in Education  
 EDUC 867-5 Qualitative Methods in Educational Research  
 EDUC 975-5 Advanced Quantitative Methods in Educational Research

##### Elective Course

In addition, MA students must complete one elective course selected from the MA/MEd electives list (see below) in consultation with the senior supervisor.

#### MEd Program

The MEd program is for students who wish to become counsellors in educational settings. The program consists of a minimum of 45 units and a comprehensive exam. All MEd students must complete the core requirements listed below.

##### Core Courses

MEd students complete all of  
 EDUC 799-3 Supervised Counselling Clinic I  
 EDUC 800-3 Supervised Counselling Clinic II  
 EDUC 801-3 Counselling Practicum I

EDUC 802-3 Counselling Practicum II  
 EDUC 862-4 Individual Assessment Procedures  
 EDUC 864-5 Research Designs in Education  
 EDUC 870-4 Theories of Counselling Psychology  
 EDUC 872-3 Ethics in Counselling Psychology  
 EDUC 874-5 Counselling Skills and Strategies  
 EDUC 877-4 Contemporary School Counselling  
 EDUC 878-5 Group Counselling  
 EDUC 883-5 MEd Comprehensive Examination

##### Elective Course

In addition, MEd students must complete one elective course selected from the MA/MEd electives list (see below) in consultation with the senior supervisor.

##### Comprehensive Examination (EDUC 883)

Students complete a comprehensive examination after completing course work and supervised field experiences. The exam is set by faculty members associated with the program, in association with the director, and covers ethics and professional practice.

#### MA/MEd Electives

MEd and MA students choose their elective course from the following.

EDUC 803-5 Educational Program Supervision  
 EDUC 805-5 Social Development in the School Context  
 EDUC 819-5 Studies in Teacher-Student Interaction  
 EDUC 822-5 Evaluation of Educational Practice  
 EDUC 829-5 Contemporary Issues in Learning Disabilities  
 EDUC 833-5 Social and Moral Philosophy and Education  
 EDUC 860-3 Foundations of Educational Psychology  
 EDUC 863-5 Quantitative Methods in Educational Research  
 EDUC 866-5 Advanced Qualitative Research in Education  
 EDUC 867-5 Qualitative Methods in Educational Research  
 EDUC 871-4 Family Counselling  
 EDUC 873-4 Vocational Counselling  
 EDUC 876-5 Cognitive Intervention Research  
 EDUC 878-5 Group Counselling  
 EDUC 970-5 Systems and Paradigms in the Psychology of Education  
 EDUC 975-5 Advanced Quantitative Methods in Educational Research

### Curriculum and Instruction

This program leads to the MA, which requires at least 25 units of course work and a thesis (EDUC 898); or the MEd degree, which requires at least 35 units of course work and a comprehensive examination (EDUC 883). The program is for educators who wish to examine critically current educational theory, research and practice. Participants are encouraged to examine their own instructional practices and to consider the match between practices and developing education theories.

The program can focus on an area of specialization such as imaginative education, inclusion, foundations, health and French education, or can be pursued as a general program. Current information about the specializations is available from the Graduate Programs office or at [www.educ.sfu.ca/gradprogs](http://www.educ.sfu.ca/gradprogs). Each specialization adds course requirements to the general program requirements.

#### Core Courses

MA and MEd students complete three of the following.  
 EDUC 816-5 Developing Educational Programs and Practices for Diverse Educational Settings  
 EDUC 820-5 Current Issues in Curriculum and Pedagogy  
 EDUC 822-5 Evaluation of Educational Programs  
 EDUC 823-5 Curriculum and Instruction in an Individual Teaching Speciality

EDUC 830-5 Implementation of Educational Programs  
 EDUC 833-5 Seminar in Social and Moral Philosophy and Education  
 EDUC 851-5 Perspectives on Technology-Supported Learning  
 EDUC 864-5 Research Designs in Education

#### Comprehensive Examination/Thesis

A final comprehensive exam is required for MEd students. A thesis is required for MA students.

### Educational Leadership

This program leads to the MA or MEd degree and is intended for current or prospective leaders who are engaged in educational activities in a variety of societal workplaces (e.g. schools, colleges, community agencies, health agencies, justice agencies, arts agencies).

The MA consists of five required courses (25 units) plus a thesis; the MEd consists of seven courses (35 units) plus a comprehensive exam. While the program is grounded both in research and in practice, it has a strong philosophical and conceptual orientation which encourage students to view issues and problems in the workplace in more complex and educative ways.

#### Core Courses

MEd and MA students complete all of  
 EDUC 813-5 Organizational Theory and Analyses  
 EDUC 815-5 Administrative Processes  
 EDUC 817-5 Policy Processes  
 EDUC 818-5 Leadership Studies

#### MEd Requirements

Students will normally be admitted to the MEd course work/comprehensive exam program. In addition to the four core courses, students will complete  
 EDUC 811-5 Fieldwork I

plus two additional courses (10 units) approved by the co-ordinator.

EDUC 883-5 MEd Comprehensive Examination follows completion of course work requirements. It is held once a year, during summer session.

#### MA Requirements

Students admitted to the MEd program may, on the senior supervisor's recommendation, transfer into the MA program. The MA requires the four core courses above plus EDUC 864. Students must demonstrate appropriate research competence which may necessitate completing one or both of the following.

EDUC 863-5 Quantitative Methods in Educational Research  
 EDUC 867-5 Qualitative Methods in Educational Research

Students may also complete one or more electives as required or approved by the senior supervisor.

EDUC 898-10 Master's Thesis follows completion of course work requirements.

For further information, contact Community Graduate Programs, 778.782.5951 Tel, [cpmed@sfu.ca](mailto:cpmed@sfu.ca)

### Educational Practice

This three-year program, leading to the MEd (course work/comprehensive exam), which focuses on educational practice and builds on the graduate diploma in advanced professional studies in education. It is available only to students who are enrolled in the graduate diploma offered by Field Programs. Students in the second year of the two year diploma program may apply to this MEd program and will undertake a third year following completion of the diploma course work. It requires 30 units of 500 division EDPR courses, plus 15 core graduate units, and a comprehensive exam.

#### Core Courses

EDUC 807-5 The Foundations of Action Research

EDUC 811-5 Fieldwork I  
 EDUC 867-5 Qualitative Methods in Educational Research  
 EDUC 883-5 MEd Comprehensive Examination  
 Contact Field Programs: 778.782.4892 Tel,  
 778.782.5882 Fax, edprgpa@sfu.ca

### Educational Psychology

This program leads to the MA or MEd degree (comprehensive examination). Through studies of theories and allied empirical research in educational psychology, and research methodologies, the program provides a general survey of educational psychology or specialization in development, exceptionality, or reading. Students may apply for transfer credit if graduate course work completed at another institution duplicates courses in this program.

#### Core Courses

MA and MEd students complete all of  
 EDUC 840-0 Graduate Seminar  
 EDUC 860-3 Foundations of Educational Psychology  
 EDUC 864-5 Research Designs in Education

#### Stream Courses

All MA and MEd students choose one of the following streams and complete those specified courses.

##### General Stream

EDUC 827-5 Individual Differences in Learning  
 EDUC 842-5 Sociocultural Perspectives on the Psychology of Development and Education

##### Development Stream

EDUC 805-5 Social Development in the School Context  
 EDUC 842-5 Sociocultural Perspectives on the Psychology of Development and Education

##### Exceptionality Stream

EDUC 829-5 Contemporary Issues in Learning Disabilities  
 EDUC 876-5 Cognitive Intervention Research

##### Reading Stream

EDUC 826-5 The Reading Process  
 EDUC 828-5 Instructional Practices in Reading

#### Elective Courses

Elective courses must be approved by the pro-tem advisor or senior supervisor prior to enrolment.

#### MA Requirements

Students complete all  
 • core courses (eight units)  
 • courses in a stream (10 units)  
 • two electives chosen from courses within the educational psychology program (10 units)  
 • one of  
 EDUC 863-5 Quantitative Methods in Educational Research  
 EDUC 867-5 Qualitative Methods in Educational Research  
 • and  
 EDUC 898-10 Master's Thesis

#### MEd (Comprehensive Examination) Requirements

Students complete all  
 • core courses (eight units)  
 • courses from any three streams (30 units)  
 • at least one elective course within the educational psychology program (five units)  
 • and  
 EDUC 883-5 MEd Comprehensive Examination

### Educational Technology and Learning Design

This program leads to either the MA (thesis) or MEd (comprehensive examination) degree. The program takes a scholarly approach to learning technologies design, plans for its use, and/or evaluations of technology-based learning innovations.

Designed to accommodate students who work full time during the day or who take a leave to study full time, the program supports diverse cohorts including K-12 teachers, college instructors, instructional designers, and aspiring academics. Applicants from a wide variety of educational and technical backgrounds are welcome. Depending upon the course work on their transcripts, students may be admitted conditionally upon completing Faculty of Education prerequisite courses.

#### Core Courses

MA and MEd students complete all of  
 EDUC 864-5 Research Designs in Education  
 EDUC 890-4 Educational Media as Foundations of Curriculum  
 EDUC 891-4 Learning Design in Technology-mediated Environments  
 EDUC 892-4 Cognitive Tools and Multimedia Learning  
 EDUC 893-4 Organizational and Social Aspects of Learning Technology Design  
 EDUC 894-4 Methods for Research and Inquiry in Learning Technologies

#### MA Requirements

MA students complete  
 • one elective course  
 • plus  
 EDUC 898-10 Master's Thesis

#### MEd Requirements

Students pursuing a master of education degree complete  
 • two elective courses  
 • plus  
 EDUC 883-5 MEd Comprehensive Examination

### Individual Program

In exceptional cases, when no other regular master's program can accommodate special interests, an applicant may propose an individual program. The curriculum must include a minimum of 30 units plus EDUC 881 for an MEd project, or 25 units plus EDUC 898 for an MA.

Individual program applicants must submit a proposal detailing the following.

- the inquiry to be pursued for the master's project or thesis
- courses proposed and their sequence (called the plan of study and research)
- a rationale for how the proposed courses contribute to the master's project or thesis
- the program may contain a combination of up to 10 units of course work in Directed Readings and/or EDUC 811 or 812 Fieldwork.
- an explanation of how the applicant's interests are not met by a regularly offered master's program.

The plan must be developed with, and approved by, a faculty sponsor who automatically becomes the senior supervisor of the master's project or thesis. A second person suitably qualified in relation to the project or thesis joins the supervisory committee normally before the completion of the fourth course.

In addition to other criteria considered for admission, the director of graduate programs or designate will adjudicate the plan of study and research regarding availability of resources to support it and whether it can be completed in reasonable time.

### Secondary Mathematics Education

This cohort program, leading to the MSc (thesis) or MEd (course work/comprehensive) in the teaching of secondary school mathematics, is offered jointly by the Faculty of Education and the Department of Mathematics. For the MSc (thesis) degree, as well as writing a thesis which will be supervised by a member of the Faculty of Education or the Department of Mathematics, students complete 28 units (see below).

Students pursuing the MEd (course work) option will, in addition to 28 units, complete a minimum of 7 units of graduate electives in education and/or mathematics, and a comprehensive examination. Students will select a degree option in consultation with faculty members.

#### Core Courses

MA and MEd students complete all of  
 EDUC 844-5 The Research Basis of Mathematics Education  
 EDUC 845-5 Learning Mathematics with Computers  
 EDUC 846-5 Foundations of Mathematics Education  
 EDUC 847-5 Teaching and Learning Mathematics  
 MATH 603-4 Foundations of Mathematics  
 MATH 604-4 Geometry

#### Elective Courses

The remaining courses are selected from Faculty of Education or Department of Mathematics graduate courses.

#### Comprehensive Examination/Thesis

A final comprehensive exam is required for MEd students. A thesis is required for MSc students.

### Teaching English as an Additional Language (TESL/TEFL)

This program, leading to the course work/comprehensive MEd degree, is for teachers working with English as an additional language learners in public schools. It will also appeal to teachers of English as a second or foreign language to adults, whose interests are primarily pedagogical. The program consists of 35 units of course work followed by the MEd comprehensive examination.

#### Core Courses

MEd students complete all of  
 EDUC 820-5 Current Issues in Curriculum and Pedagogy  
 EDUC 824-5 Seminar in Second Language Teaching  
 EDUC 825-5 Second Language Acquisition and Schooling  
 EDUC 856-5 Sociocultural Perspectives on Education and Identity

#### Elective Courses

MEd students complete three of  
 EDUC 816-5 Developing Educational Programs and Practices for Diverse Educational Settings  
 EDUC 823-5 Curriculum and Instruction in an Individual Teaching Specialty  
 EDUC 827-5 Individual Differences in Learning  
 EDUC 833-5 Seminar in Social and Moral Philosophy and Education  
 EDUC 854-5 Teachers as Agents of Change  
 EDUC 855-5 Multicultural and Race Relations Education: Policy Development and Program Implementation

#### Comprehensive Examination

A comprehensive exam is required for MEd students.

### Doctoral Programs

Doctoral degrees signify the acquisition of advanced knowledge in a field of specialization and advanced competence in conducting significant and original education research. The EdD program emphasizes leadership in education. The PhD programs accentuate theoretical and professional studies plus advanced scholarly inquiry in education. Both degrees culminate in a comprehensive examination (EDUC 983) and a doctoral thesis (EDUC 899). Requirements for doctoral degrees vary by program.

#### Residence Requirements

See "1.7 Residence and Course Requirements" on page 222.



## Comprehensive Examination

All doctoral candidates must complete a comprehensive examination by enrolling in EDUC 983. This is a prerequisite to EDUC 899 Doctoral Thesis. Normally, the comprehensive exam is completed in the term in which course requirements are completed or the term immediately following.

## EdD and PhD Thesis

Normally, before the fourth course, a thesis research plan is presented to the tenured or tenure track Faculty of Education member whom the student proposes to be senior supervisor. Following the supervisor's approval and at least one other faculty member chosen in consultation with the senior supervisor, the supervisory committee is formed and the student proceeds to the thesis. The completed thesis is examined as in *Graduate General Regulations* "1.9 Preparation for Examinations" on page 224 and "1.10 Examinations" on page 225).

For EdD students, the member(s) in addition to the senior supervisor may be member(s) of the University faculty or other approved suitably qualified persons.

## Programs of Study

### Arts Education

This PhD program is for those interested in becoming scholars and leaders in art education. Students complete all of

### Educational Theory

EDUC 901-5 Seminar in the History of Educational Theory  
EDUC 902-5 Interdisciplinary Seminar in Contemporary Educational Theory

### Arts Core

EDUC 945-5 Doctoral Seminar in Arts Education

### Curriculum Specialization

EDUC 899-10 Doctoral Thesis  
EDUC 910-5 Directed Readings  
EDUC 983-5 Doctoral Comprehensive Examination

Courses in research methodology may be required depending upon the student's research interests.

### Curriculum Theory and Implementation

This PhD program requires successful completion of 20 units beyond the MA, MSc or MEd requirements.

Students complete all of  
EDUC 899-10 Doctoral Thesis  
EDUC 901-5 Seminar in the History of Educational Theory  
EDUC 902-5 Interdisciplinary Seminar in Contemporary Educational Thought  
EDUC 911-5 Colloquium in Curriculum Theory I  
EDUC 912-5 Colloquium in Curriculum Theory II  
EDUC 983-5 Doctoral Comprehensive Examination

The supervisory committee may require further work in the Faculty of Education or other faculties. Students are encouraged to complete additional courses from related departments outside the Faculty of Education.

### Philosophy of Education

This program focuses on three interconnecting themes of ecology, culture and consciousness, and brings relevant philosophical traditions, theories, innovations, and methods to work with these themes.

Students complete all of  
EDUC 899-10 Doctoral Thesis  
EDUC 901-5 Seminar in the History of Educational Theory  
EDUC 902-5 Interdisciplinary Seminar in Contemporary Educational Theory  
EDUC 921-5 Seminar in Philosophy and Educational Theory

EDUC 922-5 Advanced Seminar in Epistemology and Education  
EDUC 983-5 Doctoral Comprehensive Examination

## Educational Leadership

This EdD program is for educational administrators who work full time, and so classes are held on extended weekends and during the summer. This degree looks beyond educational leadership as the application of generic management techniques. It prepares leaders for situations where technique is insufficient and prepares educational leaders to deal with currently pressing issues and to understand deeper ethical, political, socio-cultural, technological, and educational matters.

Students complete all of  
EDUC 899-10 Doctoral Thesis  
EDUC 950-5 Approaches to Educational Research  
EDUC 960-5 Ethics, Law and Professional Leadership  
EDUC 961-5 Educational Governance, Reform and Diversity  
EDUC 962-5 Organizational Leadership, Accountability, and the Public Interest  
EDUC 964-5 Seminar in Educational Theory  
EDUC 983-5 Doctoral Comprehensive Examination

### EdD Program Information

778.782.8099 Tel, 778.782.8119 Fax, [www.educ.sfu.ca/gradprogs/doctoral/education\\_leadership](http://www.educ.sfu.ca/gradprogs/doctoral/education_leadership)

### Program in French

[www.sfu.ca/baff-offa/educfr](http://www.sfu.ca/baff-offa/educfr)

## Educational Psychology

This PhD program addresses theories, basic and applied research, and research methods in educational psychology. The program does not prepare students for BC College of Psychologists registration. Students may apply for transfer credit if a course is acceptable to the degree. Exact transfer credit equivalence is not required, providing the course is assessed as content equivalent. Admitted students must satisfy all requirements for the MA program in educational psychology. If EDUC 975 was completed in the MA program, PhD students must take another course of at least four units to replace EDUC 975 in the doctoral program.

### Core Requirements

Students complete all of  
EDUC 840-0 Graduate Seminar  
EDUC 899-10 Doctoral Thesis  
EDUC 970-4 Systems and Paradigms in Educational Psychology  
EDUC 971-4 Advanced Topics in Educational Psychology  
EDUC 975-4 Advanced Quantitative Methods in Educational Research  
EDUC 983-5 Doctoral Comprehensive Examination

### Electives

Students select at least two additional graduate courses totalling a minimum of eight units. Elective courses must be approved by the pro-tem advisor or senior supervisor prior to enrolment.

If EDUC 840 was complete in the MA program, PhD students are not required to complete the course again.

## Educational Technology and Learning Design

This program develops highly qualified educational technology researchers and designers in academia, research and development labs, corporations, school boards or other settings. The PhD program is organized in close conjunction with the master in educational technology and learning design program.

Admitted students satisfy all requirements for the master in educational technology and learning

design. Applicants are welcomed from a variety of educational and technical backgrounds, although they may be required to complete courses from the MA program before beginning course work on the PhD.

### Core Courses

Students complete all of  
EDUC 899-10 Doctoral Thesis  
EDUC 931-4 Group and Organizational Learning Technologies  
EDUC 932-4 Learner-Centred Design  
EDUC 983-5 Doctoral Comprehensive Examination  
and one of  
EDUC 901-5 Seminar in the History of Educational Theory  
EDUC 902-5 Interdisciplinary Seminar in Contemporary Educational Theory

and one of  
EDUC 866-5 Advanced Qualitative Methods in Education\*  
EDUC 975-4 Advanced Quantitative Methods in Educational Research\*

plus one elective graduate course of a minimum of three units as approved by the supervisor and co-ordinator of the program.

\*prerequisites must also be satisfied, either prior to admission or during enrolment (see "Education EDUC" on page 361 in the *Course Catalogue* for prerequisites)

The supervisory committee may require further work in the Faculty of Education or other faculties. Students are encouraged to draw additional courses from related units outside of the Faculty of Education.

In addition to the course requirements listed above, students must also participate in the Education Technology Program Institute each term.

## Languages, Cultures and Literacies

This PhD program offers educators/researchers the opportunity to focus on the cultural and linguistic diversity that characterizes contemporary classrooms. The program provides opportunities for students to participate in ongoing research and ultimately to conduct their own research regarding how diversity might be recognized, strengthened and taken as a resource in public education. Courses offer a range of opportunities to question meanings and practices of social difference including those based on race, gender, language, class, and sexuality.

Students complete all of  
EDUC 866-5 Advanced Qualitative Methods in Educational Research  
EDUC 899-10 Doctoral Thesis  
EDUC 923-4 The Politics of Difference: Coalition Building and Critical Pedagogy  
EDUC 924-4 Multilingual Societies and Identities in a Globalizing World  
EDUC 925-4 Critical Literacies in Multilingual Contexts  
EDUC 926-2 Doctoral Seminar A: Anthropological Approaches to Educational Research  
EDUC 927-2 Doctoral Seminar B: Sociolinguistic Approaches to Educational Research  
EDUC 928-2 Doctoral Seminar C: Critical and Sociocultural Approaches to Educational Research  
EDUC 983-5 Comprehensive Examination

Students are welcome to complete other courses in the Faculty of Education and throughout the University, with their senior supervisor's permission.

## Mathematics Education

This PhD program is for those interested in becoming scholars and leaders in mathematics education. Prior knowledge of mathematics and issues related to teaching and learning mathematics is required.

Students complete all of  
 EDUC 899-10 Doctoral Thesis  
 EDUC 910-5 Directed Readings  
 EDUC 941-5 Mathematical Learning and Thinking:  
     Historical, Philosophical and Psychological  
     Dimensions  
 EDUC 942-5 Contemporary Theories and  
     Methodologies in Mathematics Education  
 EDUC 946-5 Doctoral Seminar in Mathematics  
     Education  
 EDUC 983-5 Doctoral Comprehensive Examination  
 plus one elective graduate course as approved by the  
 supervisor and co-ordinator of the program.

## Field Programs

8559 Education Building, 778.782.4892/5830 Tel,  
 778.782.5882 Fax, [www.educ.sfu.ca/fp](http://www.educ.sfu.ca/fp),  
[edprgpa@sfu.ca](mailto:edprgpa@sfu.ca)

### *Director*

L. Kanevsky BA (S Fraser), MASpEd (San Diego),  
 MPhil, PhD (Col)

### Graduate Diploma Offered

graduate diploma in advanced professional studies in  
 education

This diploma is laddered to the master of education  
 program in Educational Practice. See "Educational  
 Practice" on page 287 for details.

### Graduate Diploma in Advanced Professional Studies in Education

This diploma program, administered through Field  
 Programs, consists of a minimum of 30 units in 500  
 division EDPR courses. (The total units may vary,  
 depending on the program content but will not be less  
 than 30 units of 500 division EDPR courses.) Course  
 work from other programs or universities may not be  
 transferred into this graduate diploma program.

Graduate diploma programs are developed in  
 co-operation with other educational partners (e.g.  
 school districts and consortia, Ministry of Education  
 regional offices) and all courses are offered at  
 off-campus sites. Each program addresses a theme

that is relevant to the educational community.

Students normally progress through the program as a  
 cohort. Significant program portions may be  
 supported via the Internet. Students who are unable  
 to follow a cohort must complete 30 units, at least 18  
 of which must be in the given theme.

### Admission

The minimum admission requirements are

- a bachelor's degree from a recognized university
- a teaching certificate based on a recognized teacher  
 preparation program, and
- submitted evidence of the student's ability to  
 undertake advanced work in education.

Under exceptional circumstances, applicants without  
 a teaching certificate but having a bachelor's degree  
 and significant teaching or leadership experience in  
 education (e.g. in a pre-school or post-secondary  
 setting) may be accepted into the program.

# Faculty of Environment

8800 Technology and Science Complex 2,  
778.782.8787 Tel, 778.782.8788 Fax,  
www.sfu.ca/fenv

## Dean

J.T. Pierce BA (Tor), MA (Wat), PhD (Lond)

## Associate Dean

D. Knowler BA, MA (Alta), PhD (York, UK)

## Graduate Certificate and Diploma Offered

graduate certificate in development studies  
graduated diploma in quantitative methods in  
fisheries management

## Graduate Degrees Offered

master of arts  
master of resource management  
master of resource management (planning)  
doctor of philosophy  
doctor of philosophy under special arrangements

## Development Studies Program

K9666 Shrum Science Centre, 778.782.4265 Tel,  
778.782.4346 Fax, www.sfu.ca/devgroup

Development Studies is the study of social transformation or change, particularly those changes that affect the quality of life of individuals and groups. The problems of social transformation are urgent and complex, and often they transcend the boundaries of conventional academic disciplines. Development Studies examines the problems in, processes involved, and the prospects for the transformation of human, natural, and material resources in various contexts and at various levels of social interaction, from the local, national, and regional to the international/global level.

To study development as social transformation, one must draw upon many disciplines in order to obtain a balanced understanding of historical and contemporary processes. These disciplines include, but are not limited to: anthropology, business, communication, economics, education, geography, history, law, political science, psychology, resource and environmental management, and sociology.

## Graduate Certificate in Development Studies

This graduate certificate in development studies links faculty teaching and research across nine units in the university, and enables students to coordinate their graduate studies so as to concentrate on development issues, using a multidisciplinary approach. Students move through their programs in their departments while also being in regular contact with those with common interests in development across the university.

## Program Requirements

- Students will be admitted to the university and graduate from their home units according to departmental, school and faculty regulations.
- Students enrolled in listed certificate courses must meet all course requirements. Students will be advised early of course scheduling (listed in the certificate) to enable them to plan their programs in consultation with their supervisory committees.

- The list of courses taught in the next terms will be published well in advance. Students should plan course choices leading to the certificate well ahead. Completing the certificate may require completion of more courses than the degree requires and may thus prolong completion time.
- Students will graduate with a regular graduate degree offered by their home units, plus a certificate that recognizes their concentration in the field of development studies.

## Admission Requirements

On being granted regular admission to a graduate program in any department, school, or faculty in the University (including special arrangements), students will be informed about the certificate by the steering committee. Though working on projects, theses, and essays is not a requirement of the certificate, students who elect to complete projects, theses, essays in the unit of admission (known as the home department) in a development-related subject will be encouraged to participate.

## Continuation Requirements

Maintaining satisfactory progress as a graduate student in the University. Students will be informed of their progress toward the certificate.

## Graduation Requirements

Students will complete four courses selected from the course list approved by the program's steering committee, including a core seminar course on development. Students complete listed courses from at least two different departments or schools (or non-departmentalized faculties). Any student can complete the certificate with an appropriate combination of courses, including the core seminar. Students are advised to complete the core seminar course in the first half of their graduate studies.

## Required Courses

The core seminar course is currently offered as a special topics course co-hosted by the School of Communication and the Department of Political Science. A list of courses eligible for inclusion in the certificate will be published annually.

## Department of Geography

7123 Robert C. Brown Hall, 778.782.3321 Tel,  
778.782.5841 Fax, www.sfu.ca/geography

### Chair

R. Hayter BA (Newcastle, UK), MA (Alta),  
PhD (Wash)

### Graduate Program Chair

E. McCann MA (Glas), MA (Miami, Ohio),  
PhD (Kentucky)

### Faculty and Areas of Research

See "Department of Geography" on page 173 for a complete list of faculty.

N.K. Blomley – political and urban geography  
T.A. Brennand – glacial geomorphology, quaternary environments, regional paleohydrology, paleogeology  
J.A.C. Brohman – third world development, economic geography, Latin America  
R.A. Clapp – economic geography, resource conservation, forest policy

V.A. Crooks – socio-spatial process of disablement, doctor patient interactions, geographies of primary health care, social policies and programs  
S. Dragicevic – geographic information science, spatial analysis and modeling  
A.M. Gill – tourism and community planning, resources management  
R. Hayter – regional development, manufacturing, BC's forest economy, Japan  
N. Hedley – geographic and spatial visualization, advanced interface research, geographic information systems, cartography, spatial cognition  
E.J. Hickin – fluvial geomorphology  
M. Holden – urban and environmental policy, sustainable development  
J. Hyndman – feminist, political and cultural geography  
P.T. Kingsbury – cultural geography, consumption tourism, social theory  
L.F.W. Lesack – ecosystem biogeochemistry, land and water interactions, limnology  
G.P. Mann – labor, natural resources, political economy, social theory  
E. McCann – urban geography, urban politics and policy  
J.T. Pierce – economic and rural geography, research methodology  
M.L. Roseland – regional planning and sustainable communities  
M.G. Schmidt – soil science, forest ecology, geographic information systems  
N.C. Schuurman – geographic information science, spatial data and integration  
J. Sturgeon – environmental geography  
J. Taylor – history of the North American west  
I. Tromp-van Meerveld – watershed hydrology, ecohydrology  
J. Venditti – fluvial geomorphology, landscape dynamics, stream restoration

### Associate Members

W.G. Gill, Vice-President, University Relations  
M.V. Hayes, Faculty of Health Sciences  
S. Markey, Explorations in the Arts and Social Sciences

## Areas of Research

The Department of Geography offers MA, MSc and PhD degrees in the Faculty of Environment. Emphasis is placed on the application of theoretical frameworks to the analysis of social, economic and physical landscapes, with particular reference to western North America.

## MA Program

### Admission Requirements

Normally, an undergraduate 3.25 CGPA is required for entry. Admission is in the fall term and applications should be completed by January 15. Admission requires a command of quantitative techniques and qualitative methodologies. Candidates lacking these will complete courses equivalent to GEOG 251 and 301. The admitted candidate works under the faculty advisor's guidance pending the choice of a two faculty member supervisory committee, one of whom may be from outside the department. They will be chosen by the beginning of the second term.

### Degree Requirements

All MA candidates are expected to complete the requirements (30 units) in six terms.

The MA program requires a thesis (18 units). The remaining 12 units consist of required and elective courses. The recommended maximum thesis length is 120 pages (including bibliography and end notes, but excluding appendices). The thesis involves the conceptualization of a problem and the collection, analysis and interpretation of empirical data. Normally, MA students present their research projects at a departmental conference (Graduate Research Day) held annually in the fall term following their entry. A written proposal should be submitted to the student's supervisory committee, defended in colloquium and approved by the end of the second term. The completed thesis will be judged by the candidate's examining committee at an oral defence.

### Course Requirements

GEOG 600 and 601 are seminars offered each fall and spring. Grading is satisfactory/unsatisfactory. Attendance is compulsory for a satisfactory grade. GEOG 604 and 605, offered every year, are required for MA students. With the advisor's consent, GEOG 604 can be replaced by another course. One of GEOG 620 and 640 (special topics) is normally offered each year depending on research interests. Other courses are offered less frequently, depending on demand and faculty availability.

### MSc Program

The department offers a program leading to a master of science with emphasis on earth surface processes and environmental geoscience, specifically in aspects of geomorphology, biogeography, soils, climatology and hydrology; spatial information science, remote sensing, GIS and spatial analysis.

### Admission Requirements

Normally, MSc candidates should have a BSc 3.25 CGPA in geography or a related discipline to enter the program. Admission is in the fall term. Applications should be completed by January 15.

### Supervisory Committee

The MSc candidate, once admitted, works under a faculty advisor's guidance, pending the choice of a supervisory committee. The supervisory committee, normally consisting of two faculty members, one of whom may be from outside the department, will be chosen by the start of the second term.

### Degree Requirements

All candidates complete degree requirements (30 units) in six terms. The program requires a thesis (18 units). The remaining 12 units will be comprised of required and elective courses.

### Course Requirements

Students complete 12 units minimum (three courses) **plus** GEOG 600 and 601 which are non-credit courses graded satisfactory/unsatisfactory. Attendance is compulsory to obtain a satisfactory grade. Normally, MSc students present their research projects at a departmental conference (Graduate Research Day) held annually in the fall term following their entry. Students normally complete GEOG 606 as part of the 12 units. With the advisor's consent, another course is possible. The remaining seven units comprise two courses from the list below, or with the graduate chair's approval, from related graduate courses in other departments such as biological sciences, chemistry, physics, mathematics, earth sciences, resource and environmental management and computing science. Students with deficiencies may be asked to complete more course work.

### Thesis

The MSc program requires the submission and successful defence of a thesis. Normally, MSc students present proposed research at a one-day conference (research day) held in the spring term. A written proposal is submitted to the supervisory committee, defended in colloquium and approved by the end of the second term and before substantive research. The thesis normally involves the conceptualization of a problem and the collection, analysis and interpretation of empirical data. The recommended maximum length of an MSc thesis is 120 pages (including bibliography, but excluding appendices). The completed thesis is judged by the candidate's examining committee at an oral defence.

### Courses

The following GEOG courses are offered for the MSc program: GEOG 600, 601, 606, 611, 612, 613, 614, 615, 617, 651, 653, 655, 656, 691, 697. For a full course list, see "Geography GEOG" on page 384.

### PhD Program

For admission, see "Graduate General Regulations" on page 219. Applicants must have a MA or MSc. Those admitted without an appropriate background may have to make up specified courses. Incoming PhD students are will complete the doctoral component of GEOG 600, a seminar on geography graduate studies, offered each fall term.

### Supervisory Committee

The student works under the faculty advisor's guidance, pending formation of a supervisory committee normally consisting of three faculty, one of whom may be from outside the department, is chosen by the beginning of the second term.

### Degree Requirements

The advisor, and subsequently the supervisory committee, and the student determine a study program to suit background and research objectives. After committee consultation, students can elect, or may be required to complete courses to acquire relevant knowledge and skills, including language.

### Qualifying Examination

Written and oral qualifying exams establish competence to proceed with doctoral thesis research and are completed at the end of the second residence term and no later than the end of the third. Students who fail the written or oral exam may retake each once, after a one term lapse.

Both parts of the qualifying examination must be successfully completed by the end of the fourth residence term. The qualifying examination committee consists of supervisory committee members (the senior supervisor acts as chair), plus an examiner external to the supervisory committee.

Written exams comprise four papers jointly agreed by the qualifying examination committee. The oral must be held within three weeks of completion of the written examination. The student is examined primarily in topics covered by the written exams, but questions may range over the entire discipline.

### Thesis

Candidates who successfully complete qualifying exams will present a thesis proposal at a department colloquium no later than the end of the fifth residence term. The supervisory committee must approve the written proposal prior to substantive research. The completed thesis is judged by the examining committee at an oral defence. If the defence fails, the candidate is ineligible for further degree candidacy. See "Graduate General Regulations" on page 219.

## School of Resource and Environmental Management

8405 Technology and Science Complex 1,  
778.782.4659 Tel, 778.782.4968 Fax,  
www.rem.sfu.ca, reminfo@sfu.ca

### Director

K. Lertzman BSc (Manit), MSc, PhD (Br Col)

### Professors Emeriti

J.C. Day BS, MSc (WOnt), PhD (Chic)

J.L. Knetsch BS, MS (Mich State), MPA, PhD (Harv)

### Professors

A.M. Gill BA (Hull), MA (Alta), PhD (Manit) – tourism and community development\*

F. Gobas BSc, MSc (Amst), PhD (Tor) – environmental chemistry and toxicology, environmental fate modelling

T.I. Gunton BA, MA (Wat), PhD (Br Col) – regional resource and development planning

M. Jaccard BA, MRM (S Fraser), PhD (Grenoble) – resource and environmental economics with primary research interests in the field of energy and sustainable economies

K. Lertzman BSc (Manit), MSc, PhD (Br Col) – forest ecology, long term forest dynamics, landscape ecology, conservation biology, global change

R.M. Peterman BSc (Calif), PhD (Br Col), Canada Research Chair – fish population dynamics and management, simulation modelling, risk assessment, decision analysis

P.W. Williams BA (Ott), MA (Wat), PhD (Utah State) – policy, planning and management issues in tourism and outdoor recreation

### Associate Professors

A. Cooper BA (Northwestern), MFS (Yale), PhD (Wash) – quantitative ecology, historical ecology, biodiversity, animal movement, resource selection

W. Haider MSc (Vienna), MA (Car), PhD (McG) – parks and outdoor recreation, human dimensions in resource management, choice modelling, social decision support systems

S. Cox BSc (Massachusetts, Lowell), MSc, PhD (Br Col) – fish stock assessment, conservation and multi-species management of recreational and marine fisheries, human dynamics

D. Knowler BA, MA (Alta) PhD (York, UK) – ecological economics, bioeconomic modelling, natural resource management in developing countries, valuation of environmental resources

E. Pinkerton BA (Wellesley), MAT (Harv), MA (Middlebury), PhD (Brandeis) – maritime anthropology, common property theory, community roles in management of adjacent renewable resources

M. Rutherford BSc, LLB (Br Col), MRM (S Fraser), MPhil, PhD (Yale) – environmental policy and planning, ecosystem-based management, policy evaluation and learning, environmental law

J.R. Welch AB (Hamilton), MA, PhD (Arizona) – cultural resource management, resource planning and policy, and traditional cultural values, systems of land use, and ecological knowledge\*\*

### Assistant Professors

K. Kohfeld BSc (Brown), MPhil, PhD (Col) – physical processes of the earth system, global change

A. Salomon BSc (Qu), MSc (Br Col), PhD (Wash) – post doctoral research fellow, marine community and ecosystem dynamics, University of Calgary

### Adjunct Faculty

C. Bataille BA (Br Col), MRM, PhD (S Fraser) – managing partner, MK Jaccard and Associates (climate change policy and energy management)

D. Boyd BComm (Alta), BLaw (Tor), MA (McG) – Senior Association, Faculty of Law, University of Victoria (environmental law)

M.J. Bradford BSc, MSc (S Fraser), PhD (McG) – research scientist, Department of Fisheries and Oceans (water flow effects on chinook salmon)

A. deBruyn BSc, MSc (Vic, BC), PhD (McG) – NSERC postdoctoral fellow

D. Dunkley BA (Guelph), MRM (S Fraser) – geoscientist/watershed planner, Greater Vancouver Regional District (policy and planning development, environment and impact assessment)

A. Fall BSc, PhD (S Fraser) – research consultant working on landscape ecology, spatially explicit simulation, natural disturbance models and sustainable forest management

J. Fall BSc (Vic, BC), MRM (S Fraser) – instructor, Capilano College

S. Hanna BSc (Vic, BC), MRM (S Fraser) – senior environmental specialist, Acres International (environmental and socioeconomic impact assessment, water resource management and environmental auditing)

H. Harker BSc (US Merchant Marine Acad), MSc (Alaska), PhD (Wat) – community planning services director, Red Deer Country, Red Deer, Alberta

E. Heyerdahl BSc (Ore), MSc, PhD (Wash) – research forester, USDA Forest Service (dendochronology, fire ecology and the analysis of historical fire regimes)

R. Hoos BSc (Calg), MSc (Vic, BC) – director of northern affairs, Polar Gas, Calgary (environmental impact assessment)

M. Ikononou BSc (Trent), MSc, PhD (Alta) – research scientist, Department of Fisheries and Oceans (mass spectrometry, environmental analytical chemistry and environmental pollution as it relates to fresh water and marine ecosystems)

S. Jessen BES, MA (Wat), PhD (Br Col) – manager, oceans and great freshwater lakes program, Canadian Parks and Wilderness Society

J. Kelly BA (Br Col), MA (Br Col), PhD (S Fraser) – principal, Kelly and Associates, Resource Consulting, director, strategic services, InterVISTAS Consulting, sustainable tourism development

N. Knight BSc, MRM (S Fraser), PhD (Br Col) – associate vice-president, planning, University of British Columbia

A. Krishnaswamy MA (Indian Forest), MA, PhD (Wash) – socioeconomic extension specialist, FORREX (forest management, community outreach)

W. Kurz DipHolzwirt (Hamburg), PhD (Br Col) – forest ecology and management, global carbon budgets

P. Lee BSc (S Fraser), MSc (Prin), PhD (S Fraser) – monitoring ecologist, Parks Canada, Vancouver (ecological integrity)

Oceans (ecosystems processes in watersheds, tophic ecology and habitat science)

E. MacIsaac BSc (Br Col) – head, Fish-Forest Research Program, Department of Fisheries and Oceans

A. MacKinnon BSc, MSc (Br Col) – manager, Forest Ecology, BC Ministry of Forests (forest ecology)

D. Marmorek BES (Wat), MSc (Br Col) – director and partner, Environmental and Social Systems Analysts Ltd. (ESSA), (adaptive environmental assessment and management; ecological impacts of acid deposition)

D.W.I. Marshall BSc (Qu) – program director, Fraser Basin Management Program (environmental and social impact assessment)

J. Morrison BEd, MEd (Vic, BC), MBA (S Fraser) – management consultant, Jim Morrison and Associates

A. Murray BSc (EnvStu) (Wat), MSc (Cant) – vice-president, community and environmental affairs, Vancouver International Airport Authority (environmental, impact assessment, environmental

management systems, sustainable development, conflict resolution, community involvement)

J. Nyboer BSc (Alta), BEd (Tor), MRM, PhD (S Fraser) – executive director, Canadian Industry Energy End-Use Data and Analysis Centre (CIEEDAC) and Energy Research Group (ERG) (energy system modelling, industrial energy use analysis, energy efficiency analysis, technology assessment)

M. Pellatt BSc, PhD (S Fraser) – coastal ecologist, Parks Canada (coastal ecology, paleoecology)

R. Porges ABD (Br Col), BA, MSc (S Fraser) – director, research services, Tourism British Columbia

P. Ross BSc (Trent), MSc (Dal), PhD (Utrecht) – research scientist, Department of Fisheries and Oceans, Institute of Ocean Sciences (environmental contaminants in marine mammals, modelling contaminants in the eco-system)

K. Rothley BS (MIT), MFS, PhD (Yale) – dean, Ontario Hockey Academy (animal behavior and the design of protected areas)

S. Saunders BSc (Qu), MRM (S Fraser), PhD (Michigan Tech) – research ecologist, Vancouver Forest Region, BC Ministry of Forests and Range

D. Selbie BScH (Qu), PhD (Qu) – research scientist, Department of Fisheries and Oceans Cultus Lake Laboratory

MM. Weinstein BSc, PhD (McG) – marine biologist, aquatic resources co-ordinator for 'Namgis First Nation, Alert Bay, British Columbia

L. Wolfe BSc (Ore), MSc, MBA (Br Col), PhD (S Fraser) – principal, Quadra Planning Consultants Ltd., Larry Wolfe Associates

C. Wood BSc (S Fraser), PhD (Br Col) – research scientist, conservation biology section, Fisheries and Oceans Canada, Science Branch

\*joint appointment with geography  
\*\*joint appointment with archaeology

The School of Resource and Environmental Management offers two interdisciplinary graduate degrees. The master's program culminates in either a master of resource management degree, or a master of resource management (planning) degree. In addition, there is a doctoral program leading to a doctor of philosophy degree.

These programs are designed for recent graduates from a range of disciplines, and for individuals with experience in private organizations or public agencies dealing with natural resources and the environment. Relevant disciplines of undergraduate training or experience include fields such as biology, engineering, chemistry, forestry and geology, as well as business administration, economics, geography, planning and a variety of social sciences. The programs provide training for professional careers in private or public organizations and preparation for further training for research and academic careers.

In the optional co-op education program, students work in a private organization or a resource management agency to gain first hand experience.

## Co-operative Education

This program places students in a government or private resource or environmental management agency to gain professional experience in applied problem solving. This optional program can lead to work that is directly applicable to REM 699.

## Centres and Institutes

### Centre for Tourism Policy and Research

The school plays a leading role in the operation of Simon Fraser University's Centre for Tourism Policy and Research. The centre undertakes research, offers professional development seminars and

workshops, and conducts planning and marketing research projects for public and private sector tourism organizations.

## Co-operative Resource Management Institute

REM faculty play an active role in this institute, a unit on the Burnaby Mountain campus that houses natural resources management agencies. The institute can facilitate solutions to difficult multidisciplinary issues in resource management by providing an environment where personnel from different management agencies such as forestry, fisheries and wildlife can work side-by-side with Simon Fraser University faculty, graduate students, post-doctoral fellows and research associates on a daily basis. The university benefits from greater concentration of expertise in resource management and from new opportunities for multidisciplinary, collaborative research programs.

## Admission Requirements

Refer to the "Graduate General Regulations" on page 219 for admission requirements. Contact the School of Resource and Environmental Management directly for more information ([reminfo@sfu.ca](mailto:reminfo@sfu.ca)). Those with degree qualifications in fields not directly related but with extensive experience in resource management are encouraged to apply.

Individuals will vary in their preparation for the various disciplines in the school. Therefore, admission to the school might be conditional upon the completion of certain undergraduate courses.

Application deadline: February 1.

## Graduate Diploma in Quantitative Methods in Fisheries Management

This interdisciplinary program provides an opportunity to study the latest quantitative methods in fisheries management. The program is aimed at those with a background in fisheries science and management, as well as those who would simply like to learn more about this field. It provides a strong foundation in the quantitative tools that are necessary for doing fish stock assessment and providing scientific advice in support of fisheries management decisions. It will also provide professionals working in the field with an opportunity to upgrade their skills in the increasingly important areas of statistics, simulation modelling and analyses of uncertainties and risks. The program emphasizes both the theory and the application of these methods to real world situations.

## Application and Admission

Applicants are normally required to hold an undergraduate degree in one of the natural or applied sciences with a minimum 3.0 CGPA or a B grade. Applications from students with other degrees or with equivalent professional training and experience will also be considered.

Applicants must submit the following documentation to the graduate secretary of the school.

- online application for graduate admission, instructions available from the Dean of Graduate Studies office's web site at [www.sfu.ca/dean-gradstudies/forms.htm](http://www.sfu.ca/dean-gradstudies/forms.htm);
- official copy of transcript of undergraduate and graduate grades (mailed directly from the granting institution);
- three confidential letters of reference (mailed directly from the referees);
- a one page statement of student interest;
- TOEFL and TWE test scores may be required for applicants whose first language is not English.
- resumé
- REM checklist

## Requirements

A mandatory non-credit one day orientation workshop for all new diploma program students will give an overview of how the various courses mentioned below will help students meet challenging issues in fisheries science and management. The workshop will also initiate dialogue between diploma students (who will bring significant work experience to class discussions), faculty and fisheries graduate students.

### Required Courses

Students complete a minimum of 22 units composed of the following courses. It is preferable that students complete the first four courses in the following order.

REM 613-5 Methods in Fisheries Assessment  
REM 661-5 Special Topics in Resources Management  
REM 663-5 Special Topics in Resource Management  
STAT 650-5 Quantitative Analysis in Resource Management and Field Biology

Students must also complete one or more of the following courses, or others approved by the academic program co-ordinator and instructor of the course.

REM 612-5 Simulation Modelling in Natural Resource Management  
REM 625-5 Risk Assessment and Decision Analysis for Management of Natural Resources  
STAT 602-3 Generalized Linear and Non-linear Modelling

## MRM Program

Students who successfully complete this program will be awarded the degree of master of resource management.

Students complete seven required courses (see below), six graduate elective courses and a research project (REM 699). A minimum of 69 units is required, consisting of 43 required units and 26 elective units. In exceptional cases, if a student provides evidence of advanced education that is equivalent to one of the required courses, a waiver may be granted for that course, thereby reducing the required courses to six.

### Prerequisite Courses

All students must be familiar with the material covered in an undergraduate course in parametric and nonparametric statistics.

### Required Courses

Students complete all of  
REM 601-5 The Social Science of Natural Resources Management  
REM 611-5 Applied Population and Community Ecology  
REM 621-5 Ecological Economics  
REM 631-5 Earth Systems and Global Change in Environmental Management  
REM 698-3 Field Resource Management Workshop  
REM 699-10 Research Project  
REM 801-5 Principles of Research Methods and Design in Resource and Environmental Management

and one of

REM 642-5 Regional Planning I  
REM 644-5 Public Policy Analysis and Administration

### Elective Courses

To fulfil the six elective courses requirement, students generally choose those that support and complement their particular research interests. Students may, in consultation with their senior supervisor, select REM courses and/or courses from other departments.

### Planning Stream

Students who successfully complete this planning stream will be awarded the master of resource management (planning) degree.

In Canada, this planning stream program is distinctive because of its focus on the policy, economic and science aspects of natural resource and environmental planning.

The program is accredited by the Canadian Institute of Planners (CIP) and the Planning Institute of BC (PIBC). An MRM (Planning) graduate is eligible for membership as a certified professional planner and may enjoy improved employment prospects, conference and workshop participation, and access to professional development programs.

Students must successfully complete of the following.

### Required Courses

REM 601-5 The Social Science of Natural Resources Management  
REM 602-5 Natural Resource Management II: Advanced Seminar  
REM 611-5 Population and community Ecology  
REM 621-5 Ecological Economics  
REM 631-5 Earth Systems and Global Change in Environmental Management  
REM 641-5 Law and Resources  
REM 642-5 Regional Planning I  
REM 643-5 Environmental Conflict and Dispute Resolution  
REM 699-10 Research Project  
REM 801-5 Principles of Research Methods

### Elective Courses

In addition to the specified required courses, students complete three elective courses chosen from the following.

REM 610-5 Applied Environmental Toxicology and Environmental Management of Contaminants  
REM 612-5 Simulation Modelling in Natural Resource Management  
REM 613-5 Methods in Fisheries Assessment  
REM 625-5 Risk Assessment and Decision Analysis for Management of Natural Resources  
REM 632-5 Terrain Evaluation  
REM 633-5 Introduction to Remote Sensing and Aerial Photographic Interpretation  
REM 644-5 Public Policy Analysis and Administration  
REM 645-5 Resource Development Communities  
REM 646-5 Environmental and Social Impact Assessment and Environmental Management Systems  
REM 647-5 Parks and Outdoor Recreation Planning  
REM 648-5 The Tourism System  
REM 649-5 Tourism Planning and Policy  
REM 650-5 Energy and Materials Management and Policy  
REM 651-5 Project Evaluation and Non-market Valuation Methods  
REM 652-5 Community Tourism Planning and Development  
REM 655-5 Water Planning and Management  
REM 658-5 Energy and Materials Systems Modelling  
REM 660-5 Special Topics in Natural Resources Management  
REM 670-5 Introduction to Forestry  
REM 671-5 Forest Ecology

plus any course from approved external curriculum such as Simon Fraser University's Centre for Sustainable Community Development, Simon Fraser University's The City Program, UBC's School of Community and Regional Planning, or other relevant Simon Fraser University courses such as geography, business, etc.

## PhD Program

### Admission Requirements

To qualify for admission, an applicant must satisfy all university admission requirements as outlined in the graduate general regulations. Applicants must have:

- the ability to carry out innovative, independent and original PhD level research in that field
- high academic standing in previous university work
- a master's degree in a related discipline

All applicants must submit the following with their application:

- all university transcripts
- a short curriculum vitae providing evidence of awards, academic performance, publications and relevant research and work experience
- a 500-1,000 word *statement of interest* describing how this program fits into the applicant's research and career objectives
- three letters of reference (using the form provided in the application package) from respected academics/researchers who have first-hand knowledge of the applicant's research capabilities and academic training
- results from the GRE Test and
- official results of the TOEFL and TWE or IELTS exams (for applicants whose first language is not English and whose previous education has been conducted in another language)

Applicants must be accepted by an identified senior supervisor prior to admittance. PhD applicants are strongly advised to visit the University for an interview prior to February 1 of the year of requested admission. See "1.3.4 Admission to a Doctoral Program" on page 220.

## Transfer from the Master's Program to the PhD Program

An MRM student who shows exceptional ability may apply to transfer to the PhD program only if the student has the ability to carry out innovative, independent and original PhD level research in that field, and has obtained high academic standing in previous university work. All university regulations governing transfers must be met. Transfers are only permitted when the student has been in the master's program for two but not more than four terms.

Transfer applications must be approved by the student's supervisory committee, the REM graduate studies committee, and the senate graduate studies committee. Transfer students will be eligible to earn only the PhD degree.

## Degree Requirements Courses

All REM PhD students must complete and maintain an A- average in the following.  
REM 611-5 Population and Community Ecology  
REM 621-5 Ecological Economics  
REM 644-5 Public Policy Analysis and Administration  
REM 698-3 Field Resource Management Workshop  
REM 802-5 Research Approaches for REM PhD Students

The student's supervisory committee may recommend that the student completes elective courses in addition to the required courses in order to strengthen the student's background in areas directly related to their thesis research. Elective courses may be completed outside REM, if approved by the student's supervisory committee.

Students who transferred from the REM master's program into the REM PhD may obtain a course waiver for REM 611, 621, and 698 if they have received credit with an A- average. If a student receives a course waiver, the student is not required to replace the course for which the waiver was received with another course.

### Comprehensive Examinations

To complete the PhD degree the student must pass the REM PhD comprehensive examination that examines the candidate's knowledge and abilities in

disciplinary areas that are different from but related to the student's thesis research. The comprehensive examination includes three disciplinary areas, i.e.

- environmental sciences
- policy and planning in resource and environmental management
- natural resource and environmental economics

To complete the comprehensive examination, the student must prepare a written integrative paper which addresses issues in these three areas. The integrative paper is evaluated by the comprehensive examination committee in accordance with the policies and procedures of the School of Resource and Environmental Management. Students must pass an oral exam based on the integrative paper which is administered by the comprehensive examining committee. The integrative paper will normally be completed in the first three terms in the PhD program and the oral exam will normally be completed early in the student's fourth term in the program. If the candidate fails the comprehensive exam, and this assessment is approved by the graduate studies

committee, the student will be required to withdraw from the PhD program.

Detailed information about the comprehensive examination procedures, dates, and deadlines are provided in the *PhD Handbook of the School of Resource and Environmental Management*.

#### **Thesis Proposal**

PhD candidates must submit a written thesis proposal by the end of the fifth term of full time program enrolment. In conjunction with the supervisory committee, students develop a detailed written research proposal which must be defended before this committee. This thesis proposal is intended to demonstrate that the candidate's research abilities are adequate for PhD level research and to determine that the proposed research is feasible and has merit. The student must pass the thesis proposal defence to remain in the program.

#### **Thesis**

A written thesis based on the candidate's original research in resource and environmental science and

management is the final PhD program requirement and must include aspects of at least two disciplinary areas (such as ecology and policy, or toxicology and law). The topic must be approved as noted above and the student's progress will be evaluated annually in accordance with the graduate general regulations.

When the thesis is essentially complete, the student must first present it to a departmental colloquium prior to proceeding to the formal thesis defence. This presentation shall form the basis of the supervisory committee's recommendation about defence readiness. All PhD candidates must then pass the formal thesis defence, which is conducted in accordance with University regulations. All other PhD general requirements are as outlined in the graduate general regulations.

#### **Residence Requirement**

A PhD candidate must be enrolled and in residence at Simon Fraser University for the minimum number of terms as described in the "Graduate General Regulations" on page 219.

# Faculty of Health Sciences

11311 Blusson Hall, 778.782.4821 Tel,  
778.782.5766 Fax, [www.fhs.sfu.ca](http://www.fhs.sfu.ca), [fhsgrads@sfu.ca](mailto:fhsgrads@sfu.ca)

## Dean

J. O'Neil BA, MA (Sask), PhD (Calif)

## Associate Deans

M.V. Hayes BA, MSc, PhD (McM), CCFP

C. Janes BA (San Diego), MA (Colorado), PhD (Calif)

## Director, Graduate Programs

M. Joffres Bac-C (Lycee de Foix), MD (Toulouse),  
MSPH, PhD (Hawaii)

Faculty hiring is underway. See "Faculty of Health Sciences" on page 207 for a complete list of faculty, and [www.fhs.sfu.ca](http://www.fhs.sfu.ca) for updated information.

## Faculty and areas of research

R. Allen – air pollution exposure assessment in indoor and outdoor exposures; air pollution health effects; the development of methods to reduce exposure misclassification in large epidemiological studies  
T. Beischlag – molecular mechanisms of action or halogenated and polycyclic aromatic hydrocarbons; molecular mechanisms of transcription factor cross-talk; development and application of genomic approaches to monitor global chromatin changes in response to environmental contaminants and exogenous chemicals

N. Berry – reproductive health and globalization, global health, Latin America, maternal mortality, immigrant parenting and family health, health promotion, community-based participatory research  
J. Calvert – international trade agreements and health policy, environment and energy, privatization, Canadian health policy, employment and human resources in the health sector

A. Chockalingam – global burden of cardiovascular and respiratory diseases; hypertension prevention and control, control of cardiovascular risk factors, ethnicity, gender and cardiovascular diseases, patient education, clinical trials research, methodology  
S. Corber – operational aspects of public health programs and interventions in Canada and globally; principles and practice of population and public health disease prevention and control international health  
K.K. Corbett – behavioral and organizational change, health communication and intervention research; participatory research with and service delivery to diverse communities and under-served populations  
S. Erikson – global health, women's reproduction, global political economy of health, governmentality, globalization and health, global relations of power, global health in international affairs

B. Fischer – mental health and addiction services and policy, knowledge translation and exchange

E. Goldner – mental health and addiction services and policy, knowledge translation and exchange  
L. Goldsmith – access to health care; medical under service; structure and organization of health care systems; qualitative methods

M.V. Hayes – social geography, population health

R. Hogg – demography, population health, infectious diseases epidemiology, HIV/AIDS, marginalized populations, First Nations health, antiretroviral therapy

C. Janes – anthropological health research in global settings, health disparities in areas undergoing socioeconomic and political reform

M. Joffres – primary prevention, population health, hypertension and cardiovascular disease epidemiology, as well as studying the link between emotions and health

B. Lanphear – children's environmental health and development of epidemiological studies of

environmental exposures and their impact on children's physical and behavioral health

F. Lee – infectious disease, mental health and addictions

L.H. Malcoe – social epidemiology; population health inequities related to gender, class, racism, and colonialism; intimate partner violence against women; participatory intervention research; indigenous health; theory and methods for studying social determinants of health

L. McCandless – Bayesian statistics, statistical methods for epidemiology, causal inference in observational studies confounding bias, Markov Chain Monte Carlo method

C. Miller – HIV and hepatitis C, addiction, adolescent health, gender theory, health policy, mixed methods  
M.H. Morrow – critical health policy with foci on: mental health reform, service provision and access to health services; mental health and social inequity; mental health and citizen engagement; globalization, neoliberal reforms, gender and health

P. Nepomnaschy – ecological perspectives on human reproduction, growth, and development; life history theory, effects of environmental and social factors on human reproduction, human variation in response to social and environmental stressors, physiological effects of stress on female reproduction, fetal adaptations to environmental and maternal challenges, effects of prenatal stress on developmental and reproductive strategies on the adult

M. Niiikura – virology, viral pathogenicity, vaccinology

B. O'Connor – population health promotion; health inequities

R. Pantomphlet – infectious disease immunology

K. Palmer – comparative health care systems and policy, public health practice, international/global health

G. Prefontaine – epigenetic/molecular genetics

J.K. Scott – immunochemistry, immunology

J. Snyder – applied ethics, public health ethics, bioethics

J. Somers – mental health services and policy, addiction and substance abuse

M. Steinberg – epidemiology and occupational health

T. Takaro – disease susceptibility factors in environmental and occupational health, particularly inflammatory lung conditions including asthma, chronic beryllium disease and asbestosis; linking laboratory biomarker work with public health practice including community-based interventions

R. Tucker – gender, ethnic and socio-economic disparities in adolescent mental health and relationships between mental health and other health issues

S. Venners – molecular environmental epidemiology of human reproduction: endocrine disrupting pollutants, biomarkers of exposure, effect, and susceptibility, gene-environment interactions, intersections of environmental, social, psychological and nutritional epidemiology

C. Waddell – children's health and mental health, health policy, population health

D. Zabkiewicz – mental health and substance abuse epidemiology

L. Zeng – statistical methods for longitudinal data analysis: estimating functions, transition models, missing data

## Advisor

Ms. L.J. Kumpula BA (S Fraser), 778.782.6852 Tel,  
778.782.5766 Fax, [kumpula@sfu.ca](mailto:kumpula@sfu.ca)

## Graduate Diploma

graduate diploma in global health

## Graduate Degrees Offered

master of public health

master of science

## Introduction

The Faculty of Health Sciences currently offers two graduate degrees, master of science (MSc) and master of public health (MPH), as well as the diploma in global health. It is anticipated that a PhD program will be offered in the future.

Students wishing to pursue research training in one of the many health sciences subject areas, and who may be considering doctoral training, should consider enrolling in the master of science program. Students desiring an applied career in population and public health should consider enrolling in the master of public health program. The MSc program is highly flexible, and can be planned according to specific interests. The program culminates with the defence of a thesis. The MPH program is a course intensive program that meets Canadian and international standards for public health practice. It requires a supervised practice experience (a practicum) and completion and defence of a master's project.

## Master of Public Health Program

Faculty of Health Sciences research and teaching programs share the defining features of integrating social, behavioral, and life sciences approaches to determinants of individual and population health, disease surveillance, health promotion, and risk mitigation. This integration combines a broad spectrum of research approaches, methods of inquiry, levels of analysis, and research perspectives.

A master's degree program, which focuses on population and public health, is offered with practice-based study which integrates core public health knowledge with the attainment of public health practitioner skills.

In addition to training in the core public health sciences, students complete one of two concentrations: global health, and population health. Both were designed to meet guidelines for public health education and practice as published by the Public Health Agency of Canada, the Canadian Public Health Association, and the US-based Council on Education for Public Health. However, the MPH program is currently undergoing accreditation review of these guidelines.

## Admission Requirements

Applicants who are recent graduates will have a baccalaureate degree in a discipline relevant to population and public health including the social and behavioral sciences, life sciences, and/or the quantitative sciences. A 3.3 cumulative grade point average is normally required. Applicants with substantial practitioner experience in health or a related field will be evaluated in part on their academic credentials and career accomplishments.

Applicants may receive conditional admission subject to satisfactory completion of additional specified courses and a statistics university undergraduate course or its equivalent.

Applicants should indicate their preferred MPH concentration (see above), and must demonstrate experience, interest, and commitment to their chosen



area of study. Global health concentration applicants should have some international experience.

Factors influencing MPH program admission include the availability of faculty with expertise in the desired area of study, enrolment space, and the applicant's specific preparation.

Meeting program application requirements does not guarantee program admission.

*Students are admitted annually in the fall term only.* All applicants must meet the application deadline which is normally set for the beginning of February. Only complete applications are considered. To apply on-line and pay the application fee, visit <http://www.sfu.ca/gradstudents/prospective/index.html>. For information about how to apply, visit the Faculty of Health Sciences' website at <http://www.fhs.sfu.ca/graduate-programs>.

## Core Requirements

All MPH students complete a minimum of 46 units of course work, which includes a 13 week practicum completed over an academic term, and submission of a master's project. With senior supervisor and graduate program director approval, students may submit a thesis in lieu of a master's project, but *all students complete a practicum*. Students choosing to write a thesis will complete a minimum of 49 units.

Students who choose to take longer to complete their program should plan a minimum of two courses per term. Note that graduate general regulations govern the permitted time to complete a master's degree (see "1.12.2 Master's Degree" on page 225).

The core courses indicated below will meet the core learning objectives and core competencies developed in consultation with faculty, students, community stakeholders, and potential future employers.

## Core Course Requirements for all MPH Concentrations (22 units)

Students complete all of  
HSCI 801-4 Biostatistics for Population Health Practice I  
HSCI 802-4 Principles of Epidemiology for Public Health  
HSCI 803-3 Qualitative and Survey Research Methods  
HSCI 845-3 Environmental and Occupational Health  
HSCI 880-3 Practicum  
HSCI 897-3 Master's Project  
HSCI 900-1 Seminars in Population and Public Health\*  
HSCI 901-1 Practicum Preparation Seminar\*\*

\*offered in the spring term, normally completed in the first program year

\*\*offered in the fall term, normally completed in the same year as the practicum

## Master's Project (HSCI 897)

Normally in the term following practicum completion, students enrol in HSCI 897 to develop the final project with their supervisors. In the following and every subsequent term, students then enrol in the project completion course (HSCI 895) until the project is completed and successfully defended, as described in Graduate General Regulations 1.9 and 1.10.

## Thesis Option

Instead of a project, students may choose a thesis. Approval of the supervisor and the graduate program director is required, to ensure that Faculty of Health Sciences thesis guidelines are met, including the development and defence of a thesis proposal.

Students choosing the thesis option will enrol in HSCI 898 and continue to enrol in this course until the thesis is completed and successfully defended, as described in Graduate General Regulations 1.9 and 1.10. Thesis students must complete a practicum.

*Note that thesis students will complete 49 units.*

## The Practicum (HSCI 880)

All students will complete a practicum, which may be undertaken during any term. Before going on practicum, students complete, at minimum, the following courses.

HSCI 801-4 Biostatistics for Population Health Practice I  
HSCI 802-4 Principles of Epidemiology for Public Health  
HSCI 803-3 Qualitative and Survey Research Methods  
HSCI 901-1 Practicum Preparation Seminar

Students will consult with their senior supervisor concerning all courses to be completed before the practicum. Under special circumstances, students may request written permission from the director, public health practice, and the senior supervisor to substitute one of the above courses, or to embark on the practicum prior to completion of these required courses.

Students normally complete their practicum during the summer term of their first year, but it may be completed later provided that prerequisites are met. Either way, these options allow ample time to complete core requirements before undertaking the practicum.

## Practicum Preparation Seminar (HSCI 901)

Students register in the practicum preparation seminar (HSCI 901) in their practicum year. Normally, students enrol in this course in the fall term of their first year.

## Concentration Requirements

In addition to the requirements stated above, students choose one of the following concentrations.

### Environmental and Occupational Health Concentration

This concentration trains practitioners for practice, research, and leadership positions in environmental health. Environmental health sciences is a complex, multifaceted field that is dedicated both to protecting communities and workers from environmental factors that adversely impact human health, and to maintaining the ecological balances essential to long-term human health and environmental quality. Environmental health is one of the largest areas of public health comprising a large percentage of public health practitioners.

In addition to the core courses listed above, students complete all of  
HSCI 815-3 concepts and Principles of Public Health Practice  
HSCI 847-3 Risk Assessment and Communication for Human Health  
HSCI 849-3 Environmental and Occupational Epidemiology

and one of  
HSCI 824-3 Comparative Health Care Systems  
HSCI 827-3 Analysis of the Canadian Health Care System

and one of  
HSCI 830-3 Health Promotion  
HSCI 835-3 Social and Behavioral contexts of Health and Disease

and one of  
HSCI 846-3 Environmental and Occupational Epidemiology  
HSCI 848-3 Toxicology, Susceptibility and Environmental Health

and two of  
HSCI 804-3 Biostatistics for Population Health Practice II  
HSCI 850-3 Air Pollution and Human Health  
HSCI 855-3 Disease Prevention and Control

With the approval of their senior supervisor and consent of the graduate program director, a student may substitute one course from this list with an HSCI elective, or from another department or faculty.

## Global Health Concentration

This concentration prepares professionals and graduates to become agents of change who are prepared to mitigate health inequities in a global context. The concentration teaches the skills and knowledge of population and public health so that students can work in resource challenged contexts. Students learn strategies for promoting health and preventing disease in socially and culturally diverse settings that are characterized by serious health inequities. Students will identify and challenge the power structures that produce poverty, inequality, and disease. They will analyze issues of ethics and human rights as these apply to health disparities worldwide. And they will develop programs and formulate policy to change and enhance the performance of health systems. Putting such knowledge into action is a critical dimension of the program. The program provides skills, experiences, sensitivity, ethical principles, and insights to respond creatively to health challenges in an interconnected and globalized world.

In addition to the core courses shown above, students in this concentration complete all of  
HSCI 821-3 Problems in Global Health  
HSCI 822-3 Globalization and Health Inequities  
HSCI 824-3 Comparative Health Care Systems  
HSCI 830-3 Health Promotion

and a minimum of one methods or skills course chosen from  
HSCI 804-3 Biostatistics for Population Health Practice II  
HSCI 805-3 Intermediate Epidemiologic Methods  
HSCI 806-3 Principles of Demographic Analysis  
HSCI 825-3 Advocacy and Communication in Global Health  
HSCI 826-3 Program Planning and Evaluation in Global Health

or a course providing appropriate methods and skills, chosen from HSCI courses, or from another department or faculty, with the permission of the senior supervisor and the graduate program director

and two additional courses selected from  
HSCI 823-3 Health, Gender and Development  
HSCI 825-3 Advocacy and Communication in Global Health  
HSCI 826-3 Program Planning and Evaluation in Global Health  
HSCI 828-3 Health, Human Security, Social Justice  
HSCI 829-3 Health Policy-making in a Global Context  
HSCI 855-3 Disease Prevention and Control  
HSCI 870-3 Global Health and International Affairs

or, with the approval of the senior supervisor, a student may substitute two courses from this list with electives drawn from the list of HSCI graduate courses, from other departments and faculties.

## Population Health Concentration

This concentration focuses on health policy and planning for health care delivery, health promotion and disease prevention, and applied methods for assessing population health. The concentration prepares established professionals and recent university graduates for positions of leadership in population and public health.

In addition to the core courses shown above, students in this concentration complete all of  
HSCI 815-3 Concepts of Population and Public Health Practice  
HSCI 827-3 Analysis of the Canadian Health Care Delivery System

HSCI 835-3 Social and Behavioral Contexts of Health and Disease  
 HSCI 855-3 Disease Prevention and Control  
 and a minimum of one methods or skills course chosen from  
 HSCI 804-3 Biostatistics for Population Health Practice II  
 HSCI 805-3 Intermediate Epidemiologic Methods  
 HSCI 806-3 Principles of Demographic Analysis  
 HSCI 825-3 Advocacy and Communication in Global Health  
 HSCI 826-3 Program Planning and Evaluation in Global Health

or a course providing appropriate methods or skills, chosen from HSCI courses or from another department or faculty, with permission of the senior supervisor and the graduate program director  
 plus three additional elective courses chosen from HSCI courses or from relevant courses in other faculties and departments, with permission of the senior supervisor and course instructor.

### **Social Inequities and Health Concentration**

The importance of reducing health inequities has emerged as an imperative for health scholars, policymakers and practitioners both within Canada and globally. Increasingly, health inequities are being understood within a conceptual framework that foregrounds the role of structural factors and accounts for intersecting axes of oppression and privilege. Despite a substantial evidence base documenting social inequities in health, there are major gaps in our understanding of the pathways and mechanisms whereby health inequities are produced. Thus, there is limited information on which to base development of effective prevention and intervention policies that will reduce these inequities.

This concentration's goal is to prepare MPH students for critical and reflexive research and practice that addresses health inequities related to poverty, racism, colonialism, sexism and other forms of structural violence. Upon completion of the concentration, learners will have a commitment and capacity to advance theory, research, and practice that explains why systemic social inequities persist and how best to reduce their effects on population health.

In addition to core courses, students complete all of  
 HSCI 807-3 Researching Health Inequities  
 HSCI 815-3 Concepts of Population and Public Health Practice  
 HSCI 835-3 Social and Behavioral Contexts of Health and Disease  
 HSCI 838-3 Theorizing Social Inequities and Health  
 HSCI 839-3 Strategies for Reducing Health Inequities  
 and one of  
 HSCI 824-3 Comparative Health Care Systems  
 HSCI 827-3 Analysis of the Canadian Health Care System

and one of  
 HSCI 822-3 Globalization and Health Inequities  
 HSCI 823-3 Health, Gender and Development  
 HSCI 829-3 Health Policy Making in a Global Context  
 HSCI 891-3 Special Topics in Health Sciences\*  
 SA 855-3 Advanced Quantitative Methods

\*when offered as Exploring Social Locations:  
 Women's Health and Policy in Canada

With the approval of their senior supervisor and consent of the graduate program director, a student may substitute one course from this list with an HSCI elective, or from another department or faculty.

plus one additional elective chosen from an HSCI course or from relevant courses in other faculties and departments, with permission of the senior supervisor and the director of graduate programs.

## **Master of Science Program**

This program offers students the opportunity to develop an area of research expertise in the health sciences. It prepares graduates for research careers in one of the signature areas that either have been developed or are currently under development within the faculty including global health; environmental health and toxicology; epidemiology and prevention of chronic disease, population and public health perspectives on mental health and addictions; the impact of social inequalities on multiple health outcomes; adolescent and children's health, health policy, and interdisciplinary perspectives on infectious disease. The available courses and directed research experiences available will cover health issues from the level of cells, organisms, systems, communities and populations, encompassing and transcending strictly individual or clinical perspectives.

Formal academic instruction is available in regularly taught courses within the faculty (as described above) as well as in other faculties and departments the University, and other BC and Alberta universities through the Western Deans' Agreement. In addition, directed studies and directed research courses may be available in areas specific.

### **Thesis Requirement**

The MSc is a research degree in which the main component will be a thesis that addresses a health sciences research problem. The thesis will comprise a focused body of study that would normally require about two to three terms to complete.

### **Admission Requirements**

Applicants who are recent graduates should have completed a baccalaureate degree in a discipline relevant to their health sciences interest. Such disciplines include the social and behavioral sciences, life sciences and/or the quantitative sciences. A minimum cumulative grade point average of at least 3.3 on grading scales that are similar to those used by Simon Fraser University is normally required.

Applicants with substantial experience as practitioners in health or a related field will be evaluated in part on their academic credentials and in part on their career accomplishments. Applicants may receive conditional admission, subject to satisfactory completion of additional specified courses.

Factors influencing admission include an assessment of whether the student's educational and career interest are complementary to the research strengths of the faculty, enrolment space, and the student's specific preparation. Meeting program application requirements does not guarantee program admission. Applicants should demonstrate how their educational, research and/or career experiences have prepared them for their selected areas of concentration.

Students are admitted annually for each fall term. All applicants must meet the application deadline, which is set for the beginning of February preceding the term of matriculation. Only complete applications are considered. To apply and pay the application fee online, consult the graduate studies website at <http://www.sfu.ca/gradstudents/applicants/index.html>. For specific Faculty of Health Sciences information, visit <http://www.fhs.sfu.ca/graduate-programs>.

### **Course Requirements**

The curriculum plan consists of a minimum of six courses, one seminar and a thesis.

Requirements include two courses in methodology and research design that are relevant to the student's research and career interest. To meet this requirement, most students will find it advantageous, depending on their interests and prior training, to complete at least two of the following courses.

HSCI 801-4 Biostatistics for Population Health Practice I  
 HSCI 802-4 Principles of epidemiology for Public Health  
 HSCI 804-3 Biostatistics for Population Health Practice II  
 HSCI 805-3 Intermediate Epidemiologic Methods.

Methods requirements for those intending to conduct laboratory-based research may be met through directed laboratory research experiences.

In addition to the two methods courses, four additional courses, selected in consultation with their supervisor, are completed from any of the faculty's graduate courses. With senior supervisor and graduate program director approval, a student may complete up to two courses outside the faculty but within the University, or from other Western Dean's Agreement universities. This agreement provides easy inclusion of graduate courses from most universities in BC and adjoining provinces.

All students complete

HSCI 900-1 Seminars in Population and Public Health

This course, which is completed during the spring term, provides a context for all master's students to meet and learn from faculty and each other.

The thesis requirement is completed by enrolling in HSCI 898-6 Master's Thesis

It comprises focused study that normally requires two to three terms to complete. Upon embarking on their thesis research, MSc thesis stream students enrol in this course and continue to enrol in the thesis completion course HSCI 896 until the thesis is completed and successfully defended, as described in graduate general regulations 1.9 and 1.10.

Before commencing master's thesis research, all students prepare and successfully defend a thesis proposal before their supervisory committee, and obtain relevant ethics, biosafety, and experimental animal handling approvals as necessary.

## **Graduate Diploma in Global Health**

This stand-alone diploma provides complementary graduate training in the basics of global health practice to those interested in learning more about global health methods and concepts. In addition to core courses, elective courses help students apply learning experiences to their global health interests and activities. The diploma is a useful adjunct to clinical training (e.g. medicine or nursing), academic training in complementary fields (e.g. development, international relations, public policy) and for those who wish to work internationally, or learn about global health research challenges and practice.

### **Course Work and Requirements**

Students complete a minimum of 22 units including all of the following core courses.

HSCI 801-4 Biostatistics for Population Health Practice I  
 HSCI 802-4 Principles of Epidemiology for Public Health  
 HSCI 821-3 Problems in Global Health  
 HSCI 822-3 Globalization and Health Inequities

### **Elective Courses**

In addition to the required core courses listed above, students complete a minimum of three elective courses, two of which should be chosen from global health area requirements, and the third course can be chosen from HSCI graduate courses, or from other Simon Fraser University graduate programs. Students should choose electives in consultation with the co-ordinator and/or director, graduate programs.

### Course Credit

Students who have completed any or all of the following global health, or population and public health courses, cannot complete corresponding 800 division HSCI courses for further credit: PPH 820, 821, 822, 823, 860, 870, 880, 897, GLOH 510, 520, 530, 610, 615, 620, 630, 635, 640, 650, 680, 690, 810, 815, 820, 830, 835, 840, 850, 880, 890.

Students in the diploma program or in the master of public health program who have completed any or all of the following global health or population and public health courses cannot complete corresponding 800 division HSCI courses for further credit: PPH 820, 821, 822, 823, 860, 870, 880, 897, GLOH 519, 520, 530, 610, 615, 620, 630, 635, 640, 650, 680, 690, 810, 815, 820, 830, 835, 840, 850, 880, 890.

Students who have completed the master's project under the title *Seminar in the Workplace Integrated*

*Learning* (PPH 897), or under the title *Practicum Project in Global Health* (GLOH 698), or under the title *MSc Project* (PPH 897) cannot complete HSCI 897 for further credit.

### Institute for Health Research and Education

Director: D. MacLean, MA, MHS (Tor), MD (Dal),  
Associate Directors: C.B. Dean, BSc (Sask), MMath,  
PhD (Wat), M.V. Hayes, BA, MSc, PhD (McM),  
778.782.4821 Tel, 778.782.5927 Fax,  
www.ihre.sfu.ca, ihre@sfu.ca

The Institute for Health Research and Education (IHRE) promotes and facilitates research collaborations that bridge the basic biomedical sciences, clinical interfaces, societies, cultures, and the health of populations, health services and systems, and technology of health. It provides a focus

for researchers from all sectors of health, and provides infrastructure to promote and foster cross-disciplinary research collaborations and the creation and promotion of new knowledge. Applications lie in the understanding of health issues from population-based, individual, and biological perspectives, and development and transfer of new technologies and treatments into the community. The IHRE coordinates a range of activities that provide library holdings in the areas of health, provided expert personnel to assist with grant applications, and skilled personnel to maintain health-related instrumentation. It has also served to foster and initiate the Faculty of Health Sciences, a venue for instructional programs open to students in September 2005, starting with a master's degree in population and public health.

# Faculty of Science

P9309 Shrum Science Centre, 778.782.4590 Tel,  
778.782.3424 Fax, [www.sfu.ca/~science](http://www.sfu.ca/~science)

## Dean

M. Plischke BSc (Montr), MPhil (Yale), PhD (Yeshiva)

## Associate Dean

R.W. Mathewes BSc (S Fraser), PhD (Br Col)

## Graduate Diplomas Offered

graduate diploma in bioinformatics  
graduate diploma in quantitative methods in fisheries  
management

## Graduate Degrees Offered

master of environmental toxicology  
master of pest management  
master of science  
doctor of philosophy  
doctor of philosophy under special arrangements

## General Regulations

See "Graduate General Regulations" on page 219 for  
admission requirements, enrolment, residence  
requirements and degree completion time limits.

## Admission Requirements

### Requirements for a Master's Degree

The minimum requirements are those stated in the  
"Graduate General Regulations" on page 219. Any  
additional requirements imposed by the supervisory  
committee must be satisfied. Individual departments  
may require additional graduate courses. Students  
who, in the opinion of the supervisory committee, lack  
certain graduate course prerequisites may be  
required to complete some undergraduate courses.

### Requirements for a Doctoral Degree

A PhD candidate must present a thesis embodying  
original research. In addition, 15 units beyond the  
BSc degree is required. Of these, at least 12 must be  
graduate courses and the remaining three may be  
graduate or upper division undergraduate within the  
candidate's department or an ancillary department.

These are minimum faculty requirements. Individual  
departments may have additional requirements.

## Full-Time Study

Full-time study for the MET, MPM, MSc, and PhD  
normally is a period of intensive work during which not  
more than 20 employment hours per week may be  
undertaken by the candidate. These refer to clock  
hours either at external employment off campus or  
employment on campus as a teaching assistant or  
research assistant performing specified duties not  
directly related to the candidate's program of study.

## Supervisory Committee

For information on supervisory committees, see  
"Graduate General Regulations" on page 219.

## Thesis

The thesis must be presented and lodged in the  
University library. Details concerning the final form for  
binding are available from the library.

## PhD Examinations

Examinations may be oral and/or written and all  
committee members must certify the results. See  
"1.9.4 Preparation for Examination of Doctoral  
Thesis" on page 224 for further regulations.

## Research Facilities

Faculty of Science research programs, housed in  
modern research laboratories, are serviced by a wide  
range of facilities and equipment. The research  
complement includes 194 faculty members, 87  
post-doctoral fellows and research associates and  
400 to 500 graduate students.

Biological research is enhanced by fresh and salt  
water aquarium facilities, a quarantined insectary, an  
11 metre research vessel, and boat and vehicle  
transports. The Bamfield Marine Sciences Centre on  
Vancouver Island is available as a marine biology and  
oceanography teaching and research facility. The  
centre is operated jointly by the Universities of  
Alberta, British Columbia, Calgary, Victoria, and  
Simon Fraser University.

Experimental facilities are available at TRIUMF, a 500  
MeV proton accelerator, for the study of high energy  
nuclear reactions, muon chemistry, condensed matter  
physics, and nuclear decay systems of exotic nuclei.  
TRIUMF is a joint venture of the Universities of  
Alberta, British Columbia, Victoria, Carleton,  
Montreal, Toronto and Simon Fraser University.

# Department of Biological Sciences

B8255 Shrum Science Centre, 778.782.4475 Tel,  
778.782.3496 Fax, [www.sfu.ca/biology](http://www.sfu.ca/biology)

## Chair

F. Breden BA (S Florida), MS (Georgia), PhD (Chic)

## Graduate Program Chair

M.M. Moore BSc, PhD (Br Col)

## Faculty and Areas of Research

See "Department of Biological Sciences" on page 183  
for a complete list of faculty.

L.I. Bendell-Young – ecotoxicology, environmental  
toxicology  
S.R. Bisgrove – cell biology  
F. Breden – population genetics, evolution of social  
behavior  
J. Cory – biological control  
I.M. Coté – marine conservation  
B.J. Crespi – behavioral ecology  
J.K. Christians – organismal physiology  
N.K. Dulvy – aquatic conservation  
E. Elle – plant evolutionary ecology  
D.J. Green – avian ecology, avian populations,  
conservation biology  
G.J. Gries – behavioral ecology, chemical ecology,  
semiochemicals  
J. Guttman – anatomy and cell biology  
M.W. Hart – marine invertebrates  
N.H. Haunerland – biochemistry, insect physiology  
H. Hutter – developmental neurobiology  
C.J. Kennedy – biochemical and aquatic toxicology,  
A.R. Kermode – plant molecular biology  
L.F.W. Lesack – ecosystem biogeochemistry,  
limnology; land-water interactions  
C.A. Lowenberger – parasitology, insect vectors  
R.W. Mathewes – paleoecology, palynology  
J. Mattsson – Arabidopsis developmental genetics  
A.O. Mooers – biodiversity, molecular analysis  
M.M. Moore – fungal pathogenesis, toxicology,  
microbiology  
R.A. Nicholson – pesticide biochemistry, toxicology  
I. Novales Flamarique – visual ecology,  
neuroethology, evolution  
W. Palen – aquatic conservation

E. Palsson – mathematical biology, cell modeling  
Z.K. Punja – plant biotechnology and pathology  
J.D. Reynolds – salmon conservation and  
management  
G.L. Rintoul – cell neurophysiology  
B.D. Roitberg – population dynamics, insect  
behavioral ecology  
M.A. Silverman – cellular neuroscience  
T.D. Williams – physiological ecology  
M.L. Winston – apiculture, social insects  
R.C. Ydenberg – behavioral ecology

## Adjunct Faculty

D. Bertram – seabird conservation biology, marbled  
Murrelet recovery  
W.S. Boyd – bird migration and conservation  
C. Bishop – wildlife ecotoxicology  
R. Butler – bird migration and conservation  
C. Eichkoff – ecotoxicology  
J. Elliott – wildlife ecotoxicology, population ecology  
of raptors  
D. Esler – population biology of waterfowl ecology  
P. Gallagher – coastal studies, selective fisheries,  
marine conservation  
D. Gillespie – biological control, biology of  
omnivorous insects  
M. Goettel – invertebrate pathology, whole organism  
and population levels (insects and microbes)  
M. Hipfner – conservation in marine ecosystems  
D. Lank – behavioral ecology and population and  
conservation biology  
D. McQueen – aquatic food web modelling; limnology  
A. Plant – plant molecular physiology  
B. Smith – ecological population modeling for  
conservation

## Associate Members

For areas of research, refer to the department listed.  
T. Beischlag, Faculty of Health Sciences  
B. Brandhorst, Department of Molecular Biology and  
Biochemistry  
F. Gobas, School of Resource and Environmental  
Management  
C. Krieger, Department of Biomedical Physiology and  
Kinesiology  
M. Niikura, Faculty of Health Sciences  
G. Prefontaine, Faculty of Health Sciences  
L.M. Quarmby, Department of Molecular Biology and  
Biochemistry  
R. Routledge, Department of Statistics and Actuarial  
Science  
P. Ruben, Department of Biomedical Physiology and  
Kinesiology  
G.F. Tibbitts, Department of Biomedical Physiology  
and Kinesiology

## Biochemistry and Molecular Biology

See page 305 for more information.

## Biophysics

Students who wish to undertake biophysics  
interdisciplinary work may apply to the Department of  
Biological Sciences or the Department of Physics.  
See "Graduate General Regulations" on page 219 for  
biophysics under special arrangements.

## Marine Science

Marine science courses, which may be included in a  
biology graduate program at Bamfield, BC, are  
offered in conjunction with certain other universities.  
They are available for graduate credit for MSc and  
PhD students on recommendation of the supervisory  
committee. See page 416 for a list of MASC courses.

## Admission Requirements

See "Graduate General Regulations" on page 219.

## Biological Sciences

### MSc and PhD Program Requirements

All master and doctoral programs require a thesis based on original research.

Each PhD student must pass an oral candidacy exam prior to the end of the fourth program term or the second term after transfer from the MSc program. The exam concentrates on the student's research area, follows a written PhD research proposal submission, and is graded acceptable/unacceptable. Students with an unacceptable grade must pass a second exam within six months; a second unacceptable rating requires program withdrawal.

For those with a master's degree, the PhD program requires at least three courses totalling not less than eight units. Of these, at least six graduate courses and the remaining units are chosen from graduate or upper division undergraduate courses within the candidate's department, or in an ancillary department. Where advance approval is obtained, a PhD student may complete up to one-half of the above course requirement at another university.

PhD students entering directly from a bachelor's program or transferring from the MSc program must complete 15 units in total (i.e. one additional three unit course beyond the University MSc requirement) (see "1.7.2 Residence Requirement for the Master's Degree" on page 223). Additional course work may be set by the supervisory committee.

For graduate program information, contact the chair, department graduate studies committee.

## Pest Management

### MPM Program Requirements

The research-based master of pest management (MPM) program is distinct from an MSc program in its strongly applied approaches to learning and discussion of biological principles, and in interfacing science with problems facing society. The program requires a thesis based on original research with relevance to pest management (BISC 849).

Each MPM student must complete all of  
BISC 601-2 Agriculture, Horticulture and Urban Pest Management

BISC 602-2 Forest Pest Management  
BISC 847-3 Pest Management in Practice

and two of

BISC 816-3 Biology and Management of Forest Insects

BISC 817-3 Social Insects

BISC 841-3 Plant Disease Development and Control

BISC 843-3 Population Processes

BISC 844-3 Biological Controls

BISC 846-3 Insecticide Chemistry and Toxicology

BISC 851-3 Vertebrate Pests

BISC 852-3 Biology of Animal Disease Vectors

BISC 884-3 Special Topics in Pest Biology and Management

and one additional 800 division elective (three units).

### Pest Management Courses

BISC 601, 602, 603, 604, and 605 are designed for students in the master of pest management degree. They may be completed for credit subject to prior approval by the student's supervisory committee.

## Environmental Toxicology

### MET Admission Requirements

Before entering the master of environmental toxicology (MET) program, the following or equivalents should be completed. These prerequisites may be waived by the departmental graduate studies committee under special circumstances on recommendation from the director.

BISC 312-3 Environmental Toxicology I  
BISC 313-3 Environmental Toxicology II  
CHEM 282-3 Organic Chemistry II  
MBB 221-3 Cellular Biology and Biochemistry

### MET Program Requirements

Student chooses a senior supervisor after admission, with program director consultation. A supervisory committee is formed by the beginning of the third term of full time equivalent enrolment. Students complete a project on a specific environmental toxicology aspect which may be based on original field, laboratory or library research. The student is supervised on this project by the senior supervisor while enrolled in BISC 656. In addition to submission of a report at project completion, the student prepares for an oral exam according to *Graduate General Regulations* (see "1.9 Preparation for Examinations" on page 224) and will be examined according to section 1.10 (see "1.10 Examinations" on page 225).

This program may be completed on a part time basis.

Every MET program consists of a minimum of 32 graduate units, including the following courses.

#### Core Courses

BISC 650-3 Environmental Risk Assessment: Human Health Risk Assessment and Ecological Effects-based Risk Assessment

BISC 651-3 Environmental Toxicology Tests I: Ecological Effects-based Tests

BISC 652-3 Environmental Toxicology Tests II: Mammalian Toxicity Tests

BISC 654-3 Food and Drug Toxicology

BISC 655-3 Environmental Toxicology Seminar

BISC 656-0 Master of Environmental Toxicology Project

BISC 855-3 Biochemical Toxicology

STAT 650-5 Quantitative Analysis in Resource Management and Field Biology

#### Elective Courses

Students complete one of

BISC 854-3 Ecotoxicology

EASC 613-3 Groundwater Hydrology

REM 610-5 Management of Contaminants in the Environment

and six units chosen from the following

BISC 846-3 Insecticide Chemistry and Toxicology

BISC 839-3 Industrial Microbiology

BISC 883-3 Special Topics in Environmental Toxicology

KIN 851-3 Recent Advances in Experimental Carcinogenesis

REM 612-5 Simulation Modelling in Natural Resource Management

### Professional Registration and Certification

Eligibility for the certification examination of the American Board of Toxicology Inc. can be met through the master of environmental toxicology program and seven years of work experience.

### Environmental Toxicology Courses

The following courses are offered for this program:

BISC 650, 651, 652, 654, 655, 656, 657, 658.

## Co-operative Education

This option allows students to gain work experience outside the University. Award of the degree is not contingent upon satisfactorily completing this option. Students enrolling in the co-op program must note the regulations governing minimum fee requirements. See "1.10 Examinations" on page 225.

## Department of Biomedical Physiology and Kinesiology

K9625 Shrum Science Centre, 778.782.3573 Tel, 778.782.3040 Fax, <http://www.sfu.ca/kinesiology>

#### Director

P.C. Ruben, BSc, MSc (G Washington), PhD (Calg), Burnaby Mountain Endowed Professor

#### Graduate Program Chair

S.N. Robinovitch BSc (Br Col), MSc (MIT), PhD (Harvard/MIT), Canada Research Chair\*

#### Faculty and Areas of Research

For a complete list of faculty, see "Department of Biomedical Physiology and Kinesiology" on page 186.

P.N.S. Bawa – neuroscience

A.P. Blaber – environmental and aerospace physiology

A.E. Chapman – biomechanics\*

T.W. Claydon – physiological and pathophysiological regulation of ion channels

V.E. Claydon – cardiovascular autonomic function

A.J. Davison – oxygen and the anti-oxidant vitamins\*

J. Dickinson – motor learning and human factors\*

M. Donelan – locomotion neuromechanics

D.T. Finegood – regulation of carbohydrate metabolism

D. Goodman – motor control and learning

J.A. Hoffer – neural control of movement and neural prostheses

C. Krieger – physiology and pathophysiology of motor control

S.A. Lear – cardiac rehabilitation

C.L. MacKenzie – motor control, human skills

R.G. Marteniuk – motor control\*

J.B. Morrison – bioengineering and environmental ergonomics\*

W.S. Parkhouse – exercise physiology and biochemistry

S.N. Robinovitch – biomechanics, falls and fall-related injuries in the elderly

M.P. Rosin – environmental carcinogenesis

P.C. Ruben – molecular basis of inheritable diseases

G.F. Tibbits – cardiac biology

A.V. Vieira – nutritional biochemistry

M.J. Wakeling – biomechanics and treatment of muscle dysfunction

H. Weinberg – electrophysiology of information processing and complex behavior\*

M.D. White – environmental physiology

*Adjunct Faculty*

L. Hove-Madsen – cardiac physiology

M.S. Koehle – exercise and environmental physiology

P.M. Lane – cancer imaging and disease prevention/treatment

P. Pretorius – physiology of aging

D. Robinson – ergonomics and human factors

I. Rossberg-Gempton – social, cultural and psychological factors of health promotion

A.W. Sheel – exercise, cardio-respiratory and environmental physiology

R.A. Strath – optometry, contact lenses in the work environment

D.E.R. Warburton – cardio-respiratory physiology

L. Zhang – oral pathology

\*emeritus

**Associate Members**

For areas of research, refer to the departments listed.  
 M.F. Beg, School of Engineering Science  
 G. Chapman, School of Engineering Science  
 B.L. Gray, School of Engineering Science  
 B. Kaminska, School of Engineering Science  
 C. Menon, School of Engineering Science  
 M. Parameswaran, School of Engineering Science  
 A.H. Rawicz, School of Engineering Science  
 M.V. Sarunic, School of Engineering Science  
 N.V. Watson, Department of Psychology  
 E.C. Young, Department of Molecular Biology and Biochemistry

**Admission Requirements**

See "1.3 Admission" on page 219. At least 24 units of appropriate undergraduate science course are required.

**Graduate Courses**

If the subject matter of a listed course has been previously completed with graduate credit, the course may not be completed again for credit.

**MSc Program (Thesis)****Degree Requirements**

This program requires a 18 units minimum of graduate courses and a thesis. If a supervisory committee deems that preparation is inadequate, more than this may be required. At least 12 of these units must be from graduate kinesiology courses.

All students must complete the following two courses.

KIN 801-3 Seminar on Research in Kinesiology  
 KIN 802-3 Statistical Applications in Kinesiology Research

Students must also complete four additional courses, at least two of which must be from the following.

KIN 810-3 Integrative Muscle Physiology  
 KIN 812-3 Molecular and Cellular Cardiology  
 KIN 821-3 Environmental and Exercise Physiology  
 KIN 825-3 Motor Learning and Control  
 KIN 840-3 Human Biomechanics  
 KIN 850-3 Control Systems in Health and Disease  
 KIN 861-3 Neuroscience  
 KIN 870-3 Modeling of Physiological Systems

Remaining units may be selected from any KIN graduate courses, and any other graduate courses at the University or other universities with prior graduate program committee approval. Courses will be chosen by the supervisory committee after consultation with the candidate. For further information and regulations, see "Graduate General Regulations" on page 219.

**Thesis**

The school encourages early thesis proposal submission which is circulated to faculty and resident graduate students, and formally presented for open forum discussion. A formal defence of the completed thesis is made to the examination committee at an open forum. The thesis proposal must precede the defence by at least four months. For regulations, see "Graduate General Regulations" on page 219.

**Time Required for Degree**

Requirements are normally completed in six terms.

**MSc Program (Course Work)****Degree Requirements**

The MSc Program by Course Work requires the completion of 30 units of graduate courses in the Department of Biomedical Physiology and Kinesiology.

All students must complete the following two courses.

KIN 801-3 Seminar on Research in Kinesiology  
 KIN 802-3 Statistical Applications in Kinesiology Research

and three of

KIN 810-3 Integrative Muscle Physiology  
 KIN 812-3 Molecular and Cellular Cardiology  
 KIN 821-3 Environmental and Exercise Physiology  
 KIN 825-3 Motor Learning and Control  
 KIN 840-3 Human Biomechanics  
 KIN 850-3 Control Systems in Health and Disease  
 KIN 861-3 Neuroscience  
 KIN 870-3 Modeling of Physiological Systems

and four electives chosen from any KIN graduate courses, and any other graduate courses at Simon Fraser University or other universities with prior approval of the graduate program committee.

All students must also complete a one-term directed study project KIN 804. Students who do not complete their project in one term must enrol for KIN 809 (Project Completion) in all subsequent terms until the project is completed. No additional credit will be given for KIN 809.

**Time Required for Degree**

It may be possible to complete the MSc course work in one calendar year of full-time study. However, it is anticipated that normally six terms will be required for degree completion. The program can be undertaken by students who are also employed.

**Application Criteria for Transfer from MSc to PhD Program**

Students currently in the kinesiology master's program may be considered for transfer to the PhD program. Such transfers will be infrequent and very selective. Normally, only students enrolled in their third through sixth terms may apply to transfer to the PhD program. The graduate program committee (GPC) reviews such applications, and the GPC chair forwards a recommendation to the dean of graduate studies. The decision is made by the dean of graduate studies.

In addition to section 1.3.4 of the graduate general regulations, eligibility and the decision regarding transfer to the PhD in kinesiology will include the following criteria.

- strong support letters from the senior supervisor and at least one other academic referee
- excellent academic performance (e.g. minimum GPA of 3.67)
- strong background in research design and statistics or modeling as appropriate to the area
- completion of kinesiology graduate seminar course
- evidence that the student is capable of completing and disseminating research. Such capability will be judged by research to date, publications and letters from referees.

**PhD Program****Degree Requirements**

Students are admitted to the program in an area defined and determined prior to acceptance by the school's graduate program committee. The program must be within the student's and the school's capabilities. Students must show competence in methodology relevant to proposed research.

Normally the supervisory committee will prescribe courses necessary to complete the student's academic preparation. In exceptional circumstances, the supervisory committee may allow the student to proceed without additional course work over and above that for a master's degree.

Study and research is designed to suit the background and research objectives of each student and may differ widely from student to student.

The student will present two school seminars on topics approved by the student's senior supervisor, of which one should be directly related to the student's thesis research. At least one of the seminars should be presented as a school seminar. The graduate program committee encourages students to participate in appropriate scientific meetings and conferences. As such, approval of a formal conference presentation, in lieu of one of the school seminars, will typically be granted.

**Comprehensive Examinations**

The comprehensive exam will normally consist of a research proposal, and a related oral and written exam.

The research proposal will be written in the format of either an NSERC Discovery Grant application, or a CIHR Operating Grant application, with an eleven page limit exclusive of budget, references, appendices, figures and tables. The proposal is to be written independently by the candidate, and should be written in enough detail to determine that the research is feasible and sufficient for PhD level research. The associated closed-book written examination will consist of questions structured to examine the candidate's knowledge of the proposed research area and to determine whether he/she is capable of carrying out the proposed research. The questions may cover areas such as: fundamental knowledge, theoretical ideas or models, methodology, analysis and interpretation of results.

The oral examination is designed to further assess the candidate's ability to understand the issues, and their ability to undertake the proposed research. It will consist of a 20-30 minute presentation of the candidate's research proposal to an open forum, followed by a closed session. At the oral examination, the examiners may ask the student to clarify or elaborate the answers to the written exam questions and may further explore the student's knowledge in any area relevant to the proposed research.

PhD students should normally expect to complete their comprehensive exams within the first six terms of PhD program enrolment. The examining committee will include the senior supervisor who, in consultation with the candidate, will nominate the other examining committee members, subject to the approval of the graduate program committee. Normally, this will consist of at least: one other member of the student's supervisory committee who is an SFU kinesiology faculty member and is also a faculty member external to the school as external examiner, who may be a member of the student's supervisory committee. The graduate program committee chair or designate will chair the committee.

**Dissertation****Dissertation Proposal**

Upon successful completion of the comprehensive examinations, the candidate prepares a dissertation proposal, which is circulated to faculty and resident graduate students, and will formally present this proposal for discussion at a school open forum. The proposal must precede the dissertation defence by at least one year.

**Completed Dissertation**

The completed dissertation is judged by the candidate's examining committee. If the dissertation defence is failed, the candidate is ineligible for further candidacy in the degree program at this University.

For information and regulations, refer to the "Graduate General Regulations" on page 219.

## Department of Chemistry

C8035 Shrum Science Centre, 778.782.3590 Tel, 778.782.3765 Fax, [www.sfu.ca/chemistry](http://www.sfu.ca/chemistry)

### Chair

Z-G. Ye BSc (Hefei Technol), MSc (Xi'an Jiaotong), PhD (Bordeaux)

### Graduate Program Chair

E. Plettner BSc, PhD (S Fraser)

### Faculty and Areas of Research

See "Department of Chemistry" on page 191 for a complete list of faculty.

G. Agnes – analytical chemistry  
C. Andreou – nuclear chemistry  
A.J. Bennet – glycoscience, physical organic chemistry  
N.R. Branda – organic chemistry, materials chemistry  
R.A. Britton – organic chemistry  
R.B. Cornell – biochemistry\*  
M.H. Eikerling – fuel cell chemistry  
B.D. Gates – nanoscience  
R. Hill – inorganic chemistry  
S. Holdcroft – polymer chemistry  
G.W. Leach – physical chemistry  
D.B. Leznoff – inorganic chemistry  
P.C.H. Li – analytical chemistry  
M.A. O'Neill – biophysical chemistry  
P.W. Percival – physical chemistry, nuclear chemistry  
B.M. Pinto – chemical biology  
E. Plettner – chemical biology  
R.K. Pomeroy – inorganic chemistry  
D. Sen – biochemistry\*  
K. Starosta – nuclear chemistry  
T.J. Storr – bioinorganic chemistry  
D.J. Vocadlo – chemical biology  
C.J. Walsby – physical chemistry  
J.J. Wilkie – theoretical chemistry  
V. Williams – organic chemistry  
P.D. Wilson – organic chemistry  
Z-G. Ye – materials chemistry  
R.N. Young – organic chemistry, medicinal chemistry  
H.Z. Yu – analytical chemistry

### Adjunct Faculty

M.J. Abrams – medicinal chemistry  
T.J. Borgford – biochemistry  
P.D. Brown – chemical biology  
J.A.C. Clyburne – inorganic chemistry  
L.R. Dalton – materials chemistry  
C.M. Friesen – organic chemistry  
C.G. Gill – analytical chemistry  
B.O. Keller – analytical chemistry  
A.R. Lewis – nuclear magnetic resonance  
K. Malek – fuel cell chemistry  
C.D. Montgomery – inorganic chemistry  
T.J. Ruth – nuclear chemistry  
L.E. Sojo – analytical chemistry  
A.S. Tracey – nuclear magnetic resonance  
N.N. Weinberg – physical chemistry, theoretical chemistry  
D.P. Wilkinson – materials chemistry

### Associate Members

For areas of research, refer to the department listed.  
J.L. Bechhoefer, Department of Physics  
D.H. Boal, Department of Physics  
N.R. Forde, Department of Physics  
G.J. Greis, Department of Biological Sciences  
K.L. Kavanagh, Department of Physics  
M.W. Paetzel, Department of Molecular Biology and Biochemistry

\*joint appointment with biochemistry

## Degrees Offered

Courses leading to an MSc and a PhD are offered.

## Degree Requirements

An assigned graduate supervisory committee meets with the student at least once a year to assess progress. The first meeting must occur before the end of the second term when the student makes an oral presentation of the research proposal. In subsequent years research progress must be reported.

## MSc Program

### Admission Requirements

See "Graduate General Regulations" on page 219.

### Degree Requirements

#### Course Work

The minimum requirement is 12 graduate units.

#### Research

A major program part is original research. A thesis describing this is submitted and defended.

## PhD Program

### Admission Requirements

See "Graduate General Regulations" on page 219.

### Degree Requirements

#### Course Work

For students entering with a BSc or equivalent: 15 graduate units. For those entering with a master's degree: six graduate units not including CHEM 801.

#### Research

A major program part is original research. A thesis embodying new and significant results is presented and defended at program conclusion.

### Transfer from MSc to PhD Program

Transfer from the MSc to the PhD program without submitting an MSc thesis must satisfy University requirements. Evidence of research potential will be judged by the graduate program committee.

## Molecular Biology and Biochemistry

See page 305 for information.

## Chemical Physics

Students who wish to undertake chemical physics interdisciplinary work may apply to the Department of Chemistry or to the Department of Physics. See "Graduate General Regulations" on page 219 for chemical physics under special arrangements.

## Co-operative Education

This option facilitates work experience outside the academic sphere. Students enrolled in the MSc program may enrol in CHEM 881 and 882. This option is only tenable after the completion of an MSc thesis and defence but before formal graduation. Enrolment requires graduate program committee approval.

## Department of Earth Sciences

7201 Technology and Science Complex 1, 778.782.5387 Tel, 778.782.4198 Fax, [www.sfu.ca/earth-sciences](http://www.sfu.ca/earth-sciences)

### Chair

D.J. Thorkelson BSc, MSc (Br Col), PhD (Car)

### Graduate Program Chair

H.D. Gibson BA (Colgate), MSc, PhD (Car)

### Faculty and Areas of Research

See "Department of Earth Sciences" on page 192 for a complete list of faculty.

D.M. Allen – hydrogeology  
A.J. Calvert – geophysics, exploration seismology  
J.J. Clague – geologic hazards and quaternary geology  
S. Dashtgard – petroleum geology, sedimentology, stratigraphy, ichnology  
G. Flowers – glaciology  
H.D. Gibson – structural geology, geochronology, tectonics  
D. Kirste – aqueous geochemistry, isotope geochemistry, hydrology  
J.A. MacEachern – ichnology and sedimentology  
D. Marshall – ore deposits, metamorphism, geochemistry  
D. Stead – engineering geology, rock mechanics, forestry geoscience  
D.J. Thorkelson – cordilleran tectonics and volcanology  
B.C. Ward – quaternary and environmental geology and forestry geoscience  
G. Williams-Jones – volcanology and geological hazards

### Adjunct Faculty

K.L. Bann – ichnology, ichnofacies, sequence stratigraphy, shallow marine environments  
P. Bobrowsky – quaternary geology and hazards  
B. Coffey – petroleum geology, carbonate sedimentology, carbonate sequence stratigraphy  
M. Colpron – cordilleran tectonics, bedrock mapping  
R. Couture – landslides, slope stability  
R. Enkin – paleomagnetism  
D. Froese – quaternary geology, tephrochronology, natural hazards  
L. Godin – structural geology, continental tectonics  
L. Jackson – quaternary stratigraphy, debris flow hazards  
O. Lian – quaternary stratigraphy, post-glacial sedimentary geology  
J. Monger – geology of the North American cordillera  
J. Moore – evolution of deformed belts, volcanic processes  
B. Rabus – remote sensing, natural hazards  
K. Simpson – volcanology, hazard assessment, economic geology  
L.C. Struik – bedrock geology, central BC, hazards policy  
P. Whitfield – hydrology

## MSc Program

A master of science is offered with emphasis on earth surface processes and environmental geoscience, surficial and Quaternary geology and sedimentology.

### Admission Requirements

See "Graduate General Regulations" on page 219. Students should normally have a BSc or equivalent with honors with at least a good second class standing (3.0 GPA) in the earth sciences (geology, geological engineering, geophysics, geomorphology, soil science or physical geography).

### Degree Requirements

#### Course Work

All students complete EASC 600 and 12 units minimum composed of at least four EASC graduate courses, or with the graduate chair's approval, from related graduate courses in other departments such as geography, chemistry, physics, biological sciences, and resource and environmental management. Course selections will include no more than six units from 700 division EASC courses. In addition, a thesis is required. The actual course selection will be a reflection of the student's research interest and guidance from the senior supervisor.

## Research

Graduates will be required to conduct original research and report their results in a thesis.

## PhD Program

Applicants normally have completed a master's degree in science or engineering. Admission is governed by the minimum University requirements (see "1.3.4 Admission to a Doctoral Program" on page 220). For students entering without a master's degree, the following additional requirements apply.

### Entry with a BSc or Equivalent Degree

- a 3.67 cumulative grade point average or equivalent first class standing
- completion of a thesis or other scholarly work

### Transfer from MSc to PhD Program

- at least 12 months in the MSc program
- a 3.67 cumulative grade point average
- completion of a thesis or other scholarly work
- approval of the student's supervisory committee and departmental graduate program committee.

## Course Work

For those with a BSc or equivalent, 15 graduate units in addition to EASC 600, 900, 901 and 998 is required. For those with a master's, six units of graduate courses in addition to EASC 600, 900, 901 and 998 is required. Graduate courses are chosen from the *Course Catalogue* (page 354), or with the graduate chair's approval, from related graduate courses in other departments/programs including physical geography, chemistry, physics, biological sciences, and the resource and environmental management. Course selections will include no more than six units from 700 division EASC courses.

Students must maintain a 3.0 CGPA in course work (see "1.5.1 Normal Grading System" on page 221). Failure to do so is evidence of unsatisfactory progress (see "1.5.4 CGPA Required For Continuation and Graduation" on page 221).

With advance approval, a PhD student may complete up to one half of the above course requirements at another university. Additional course work may be assigned by the supervisory committee, based on the results of the oral candidacy examination.

In addition to normal course work, PhD students present two research seminars (EASC 900 and 901); at least one should be based on completed or nearly completed thesis work. One seminar may address any earth sciences topic approved by the supervisory committee. PhD students are expected to attend all the research seminars in the department.

## Oral Candidacy Examination

PhD students must complete an oral candidacy exam prior to the end of the fourth term of enrolment, or in the first term after transferring from the MSc program.

The candidate must submit a written thesis proposal to the supervisory committee and present it at the beginning of the oral candidacy exam, which is followed by an oral exam. The student demonstrates an ability to conduct independent research, and have a sufficient command of the studied discipline to explain the research proposal and defend it. The examination must be successfully completed prior to undertaking any significant thesis research.

The exam concentrates on major and two minor research areas, as agreed by the supervisory committee and student, and is graded satisfactory/unsatisfactory by an examining committee of the supervisory committee and one external member. Students with an unsatisfactory grade must pass a second exam within six months; a second unsatisfactory rating results in withdrawal.

## Thesis

Students define and undertake original research, the results of which are reported in a thesis and defended before an examining committee (see "1.9.3 Examining Committee for Doctoral Thesis" on page 224). Students must conform to residence requirements (see "1.7.3 Residence Requirement for the Doctoral Degree" on page 223).

The program will normally be completed in 12 terms (four years) and not more than 15 terms (five years).

The student's progress is reviewed every 12 months by a supervisory committee of three or more faculty (see "1.8.1 Progress Evaluation" on page 223). The senior supervisor will be an earth sciences faculty member approved by the graduate program committee. At each review, the student presents a summary of work to date, with the first review being the oral candidacy exam when the thesis proposal is to be presented. Students with unsatisfactory research progress, or failing to demonstrate satisfactory knowledge and understanding of recent publications in their research area, or failing to have their revised research proposal approved by the supervisory committee within 18 months of admission may be required to withdraw (see "1.8.2 Review of Unsatisfactory Progress" on page 223).

# Department of Mathematics

K10512 Shrum Science Centre, 778.782.3059 Tel, 778.782.4947 Fax, www.math.sfu.ca

### Chair

T. Archibald BMath (Wat), MA (York), MA, PhD (Tor)

### Graduate Program Chairs

N. Bruin PhD (Leiden)

S. Ruuth BMath (Wat), MSc, PhD (Br Col)

### Faculty and Areas of Research

See "Department of Mathematics" on page 196 for a complete list of faculty.

B.R. Alspach\* – graph theory, discrete mathematics  
 T. Archibald – history of mathematics  
 J. Bell – algebra, analytic number theory, combinatorics, asymptotic enumeration  
 J.L. Berggren\* – history of mathematics, algebra  
 P.B. Borwein – analysis, computation, number theory  
 T.C. Brown\* – algebra, combinatorics  
 N. Bruin – arithmetic geometry, number theory  
 C. Chauve – bioinformatics, algorithmics, combinatorics  
 I. Chen – number theory, arithmetic geometry  
 K.-S. Choi – number theory, algebra  
 R. Choksi – calculus of variations, partial differential equations, and applications to material science  
 A. Das\* – variational techniques; interior solutions in general relativity  
 M. DeVos – structural graph theory, combinatorial number theory  
 R. Fetecau – numerical methods, mathematical modelling, analysis for multi-scale phenomena; geometric mechanics and its relation to numerical algorithms for mechanical systems, symplectic integration, variational methods for collisions  
 L. Goddyn – combinatorics  
 J. Jedwab – discrete mathematics, exploratory computation, digital communication  
 M.C.A. Kropinski – numerical solutions of nonlinear differential equations; fluid dynamics  
 A.H. Lachlan\* – mathematical logic  
 P. Lisonek – combinatorics, coding theory  
 Z. Lu – algorithm design and analysis for large-scale continuous discrete optimization and stochastic programming, application of operations research in bioinformatics, data mining, finance, logistics and supply chain, manufacturing and structural design

M. Mishna – combinatorial functional equations, algorithmic and algebraic combinatorics, computer algebra  
 B. Mohar – topological graph theory, graph colouring, algebraic graph theory, graphs and matrices, infinite graphs  
 M.B. Monagan – algebra, computer algebra  
 D. Muraki – asymptotic analysis and modelling for the physical sciences, nonlinear waves and dynamics, atmospheric fluid dynamics  
 N. Nigam – PDE and numerical analysis, with applications in computational electromagnetics and micromagnetics  
 A.M. Oberman – nonlinear partial differential equations, numerical analysis, math finance  
 A. Punnen – discrete/combinatorial organization and applications  
 N.R. Reilly\* – algebra  
 R.D. Russell – numerical analysis; numerical solution of differential equations, dynamical systems  
 S. Ruuth – scientific computing, differential equations, dynamics of interfaces  
 C.Y. Shen\* – electromagnetic scattering; large scale scientific computing  
 L. Stacho – graph theory, discrete mathematics  
 T. Stephen – combinatorial optimization, approximation algorithms, complexity and combinatorics  
 J. Stockie – fluid dynamics, scientific computing, industrial mathematics  
 B.S. Thomson\* – analysis  
 M.R. Trummer – numerical analysis; differential equations, integral equations  
 P. Tupper – molecular dynamics, phase field models, phylogenetics, statistical mechanics, stochastic differential equations  
 J.F. Williams – asymptotic analysis for nonlinear PDEs, adaptive numerical methods and industrial mathematical models  
 R. Wittenberg – nonlinear dynamics, differential equations  
 K. Yeats – combinatorics and quantum field theory  
 \*emeritus

## Admission Requirements

See "1.1 Degrees Offered" on page 219 for admission requirements. Applicants normally submit aptitude section scores and an appropriate advanced section of the Educational Testing Service's graduate record exams. Applicants whose first language is not English will be asked to submit TOEFL results.

## Co-operative Education

The department has introduced co-op education into its graduate program to allow students to gain work experience outside the academic sphere. Students who are currently enrolled in the MSc or PhD programs may apply.

## Applied and Computational Mathematics

### Admission Requirements

See "Graduate General Regulations" on page 219 for admission requirements. Applicants normally submit scores in the aptitude section and an appropriate advanced section of the Educational Testing Service's graduate record examinations. Applicants with backgrounds in areas other than mathematics (for example, a bachelor's degree or its equivalent in engineering or physics) may be considered suitably prepared for these programs.



## MSc Program Requirements

An MSc candidate will normally obtain 26 units beyond courses completed for the bachelor's degree. These 26 will consist of at least four courses chosen from the core courses list below, with at least one from each of the pairs APMA 900, 901; APMA 920, 922; APMA 930, 935; a further seven graduate units; and a further three units which may be graduate or 400 undergraduate division. Normally courses that are cross-listed as undergraduate courses cannot be used to satisfy graduate course requirements. The six core courses are as follows.

APMA 900-4 Advanced Mathematical Methods I  
APMA 901-4 Advanced Mathematical Methods II  
APMA 920-4 Numerical Linear Algebra  
APMA 922-4 Numerical Solution of Partial Differential Equations  
APMA 930-4 Fluid Dynamics  
APMA 935-4 Analysis and Computation of Models

In addition to this requirement (normally completed in five terms), the student completes a project involving a significant computational component and submits and successfully defends a project report. This project should be completed within about one term.

## PhD Program Requirements

PhD candidates must obtain a further eight graduate units beyond the MSc requirements. Candidates who are admitted to the PhD without an MSc must obtain credit or transfer credit for an amount of course work equivalent to that obtained by students with a MSc.

Candidates pass an oral candidacy exam given by the supervisory committee before the end of the fourth full time term. The exam consists of a proposed thesis topic defence and supervisory committee questions about related proposed research topics. The exam follows submission of a written PhD research proposal and is graded pass/fail. Those with a fail complete a second exam within six months. A student failing twice will normally withdraw.

A PhD candidate must submit and defend a thesis based on his/her original work that embodies a significant contribution to mathematical knowledge.

## Courses

See page 312 for APMA course descriptions. The APMA courses replace courses formerly labelled MATH. For MATH 800-899 descriptions, see page 417. Course descriptions for STAT 801-890 are on page 446. Except for selected topics courses, students with credit for a MATH labelled course may not complete the corresponding APMA course for further credit.

## Mathematics

### MSc Program Requirements

#### Thesis Option

MSc candidates normally complete at least 18 graduate units beyond courses completed for the bachelor's degree. Of these, at least 12 should be numbered 800 or above. The course work should involve at least two different mathematics areas subject to supervisory committee and department graduate studies committee approval. The candidate also submits a satisfactory thesis and defends it at an oral exam based on the thesis and related topics (MATH 898). See "Graduate General Regulations" on page 219 for regulations.

#### Project Course Option

An MSc candidate is normally required to complete at least 30 graduate units beyond courses completed for the applicant's bachelor's degree. Of these, at least 18 units should be from courses numbered 800 or above. The course work should normally involve at least three different mathematics areas subject to the

approval of the student's supervisory committee and the department's graduate studies committee.

The candidate is required to complete and pass the project course MATH 880 and the examination course MATH 882. At most, one unsuccessful attempt each at MATH 880 and at MATH 882 is allowed.

See "Graduate General Regulations" on page 219 for further information and regulations.

## PhD Program Requirements

A PhD candidate is normally required to complete the MSc requirements (either option) and at least 12 further graduate units. Of these, at least eight units should be from courses numbered 800 or above. Subject to the approval of the department's graduate studies committee, a PhD candidate with a MSc is deemed to have completed the MSc requirements for the purpose of the PhD program requirements. The graduate course work should normally involve at least four different areas of mathematics subject to the approval of the student's supervisory committee and the department's graduate studies committee.

Candidates normally pass a two stage general exam. The first stage consists of successful completion of a comprehensive exam (MATH 878). In the second, students present to their supervisory committee a written thesis proposal and then defend it at an open oral defence (MATH 879). The supervisory committee evaluates the thesis proposal and defence, and passes or fails the student. A candidate cannot complete either general exam stage more than twice. Both stages must be completed within six full-time terms of initial enrolment in the program.

Students must submit and successfully defend a thesis which embodies a significant contribution to mathematical knowledge (MATH 899).

See "Graduate General Regulations" on page 219 for further information and regulations.

## Courses

Seven hundred division courses may be offered in conjunction with a 400 division course. Students may not complete a 700 division course if it is offered in conjunction with a 400 division course which they have completed previously.

# Department of Molecular Biology and Biochemistry

8166 South Science Building, 778.782.5630 Tel,  
778.782.5583 Fax, www.sfu.ca/mbb

#### Chair

B.P. Brandhorst AB (Harv), PhD (Calif)

#### Graduate Program Chair

N. Harden BSc (Br Col), PhD (Camb)

#### Faculty and Areas of Research

See "Department of Molecular Biology and Biochemistry" on page 200 for a complete list of faculty.

D.L. Baillie – developmental genetics, genomics  
C.T. Beh – cholesterol molecular genetics and genomics  
B.P. Brandhorst – cell biology of development  
F.S.L. Brinkman – bacterial genomics and bioinformatics

M.A. Brockman – virology, immunology of HIV  
N.J. Chen – bioinformatics, genome architecture, expression and evolution  
J. Choy – immunology, cardiovascular physiology  
R.B. Cornell – membrane biochemistry, protein lipid interactions

L. Craig – structure assembly and function of bacterial pili and related virulence factors  
W.S. Davidson – molecular, population and evolutionary genetics  
S.M. Gorski – developmental and cellular genetics, apoptosis  
N. Harden – developmental genetics, signal transduction  
N.C. Hawkins – developmental genetics  
R. Holt – synthetic biology. DNA sequencing, neurogenomics  
B.M. Honda – molecular biology and gene regulation  
S. Jones – bioinformatics and genomics of cancer  
M.R. Leroux – protein structure and function  
M.W. Paetzel – protein structure and function  
F.F. Pio – proteomics, bioinformatics, apoptosis  
L.M. Quarmby – cell biology  
J.K. Scott\*\*\* – immunochemistry, immunology  
D. Sen\* – nucleic acid biochemistry, chromosome structure  
J.L. Thewalt\*\* – membrane biophysics, nuclear magnetic resonance  
P.J. Unrau – RNA-catalyzed chemical reactions, early metabolism, self-replicating systems  
E.M. Verheyen – *Drosophila* developmental genetics, cell fate determination  
E.C. Young – Ligand-induced conformational changes in ion channels

#### Adjunct Faculty

T. Borgford – protein biochemistry, biotechnology  
R. Bruskewich – bioinformatics, rice genomics  
D. Granville – cardiovascular diseases, apoptosis  
M. Hirst – genomics, protein interactions  
K.Y. Leung – bacterial pathogenesis and secretion  
M. Marra – functional genomics of cancer, bioinformatics, large scale DNA mapping and sequencing  
J. Mills – cell signalling, neuro development  
G.B. Morin – proteomics, protein interactions  
F. Ouellette – bioinformatics, data management tools  
E. Stringham – developmental and molecular genetics of cellular signalling

#### Associate Members

For areas of research, refer to the department listed.  
T.V. Beischlag, Faculty of Health Sciences  
A.J. Bennet, Department of Chemistry  
N.R. Branda, Department of Chemistry  
F. Breden, Department of Biological Sciences  
T. Claydon, Department of Biomedical Physiology and Kinesiology  
E.G. Emberly, Department of Physics  
N. Forde, Department of Physics  
N.H. Haunerland, Department of Biological Sciences  
C. Krieger, Department of Biomedical Physiology and Kinesiology  
P.C.H. Li, Department of Chemistry  
C.A. Lowenberger, Department of Biological Sciences  
M.M. Moore, Department of Biological Sciences  
M. O'Neill, Department of Chemistry  
B.M. Pinto, Department of Chemistry  
E. Plettner, Department of Chemistry  
G. Prefontaine, Faculty of Health Sciences  
P. Ruben, Department of Biomedical Physiology and Kinesiology  
G.F. Tibbits, Department of Biomedical Physiology and Kinesiology  
D.J. Voadlo, Department of Chemistry  
H. Yu, Department of Chemistry  
\*joint appointment with chemistry  
\*\*joint appointment with physics  
\*\*\*joint appointment with health sciences

Obtain information from the MBB graduate program assistant, Department of Molecular Biology and Biochemistry, Simon Fraser University, 8888 University Drive, Burnaby, BC, V5A 1S6, 778.782.5631, mbb@sfu.ca

## Admission Requirements

See "1.3 Admission" on page 219 for requirements. Applicants should normally have completed some advanced course work in a related discipline.

## Degree Requirements

Students are assigned a graduate supervisory committee which specifies appropriate work to meet or exceed the minimum requirements. Students are expected to attend the MBB research seminar series and participate regularly in a journal club.

## MSc Program

### Course Work

Minimum requirements are 12 graduate units including MBB 801 and up to three units of colloquia.

### Research

A major part of the MSc is original research. A thesis describing the work is submitted and defended in accordance with *Graduate General Regulations*.

## PhD Program

### Course Work

For those with a BSc or equivalent, 18 units minimum is required, at least 15 of which must be graduate including MBB 801 and 806. This can include up to three MBB units. PhD students normally enrol in MBB 806 at the earliest opportunity following four program terms. With supervisory committee approval, MSc students may apply to the MBB graduate program committee for transfer to the PhD program.

For those entering with an MSc, six units minimum are required including MBB 806 and 801 if not already completed. MBB 806 must be completed at the first opportunity following two terms of program enrolment.

### Research

A major portion of the program is original research. An original thesis is presented and defended according to "1.7.5 Doctoral Thesis" on page 223 of the *Graduate General Regulations*. In addition, all MBB candidates present a public seminar.

## Graduate Diploma in Bioinformatics

The Department of Molecular Biology and Biochemistry and the School of Computing Science offers this program which provides advanced education in bioinformatics for students with a bachelor's degree in molecular biology, cell biology, biochemistry, computer science, mathematics, or related disciplines. Admission is highly competitive.

This program supports students sponsored by the Canadian Institutes of Health Research (CIHR) Bioinformatics in Health Science Training Grant in which Simon Fraser University is a full partner with the University of BC and the BC Genome Sciences Centre. Students who are not part of the program are strongly encouraged to choose their courses from those offered at Simon Fraser University.

The program requires 33 units, with four core courses (12 units), three electives (9 units) and a minimum of two practicum rotation terms (12 units). Students must obtain a B or better in each course or practicum. The student's advisory committee consists of a senior mentor and two other participating faculty members from the faculty at Simon Fraser University, UBC and the BC Genome Sciences Centre. In consultation with mentors, students will be assigned practicums based on needs, interest, and background. The result of the

practicum is written in journal form for an oral presentation. The advisory committee will grade both the oral presentation and written report.

### Core Courses

All four core courses should be completed in the first term, dependent upon term course offerings.

Students complete one of  
CMPT 341-3 Introduction to Computational Biology  
CMPT 771-3 Bioinformatics Algorithms

and one of  
MBB 441-3 Bioinformatics  
MBB 741-3 Bioinformatics

and one of  
CMPT 505-3 Problem-based Learning in Bioinformatics\*  
MBB 505-3 Problem-based Learning in Bioinformatics\*

and one of  
CMPT 506-3 Critical Research Analysis\*\*  
MBB 506-3 Critical Research Analysis\*\*

\*course is completed at Simon Fraser University, BC Cancer Agency, and the Centre for Molecular Medicine and Therapeutics

\*\*course is completed at Simon Fraser University and University of British Columbia

### Elective Courses

In each of the first, second and third terms, students must also complete at least three elective courses in each term from the following.

CMPT 354-3 Database Systems I<sup>4</sup>  
CMPT 740-3 Database Systems<sup>5</sup>  
CMPT 761-3 Image Synthesis  
CMPT 764-3 Visualization  
CPSC 304-3 Database Management and Design<sup>4†</sup>  
CPSC 504-3 Advanced Database Design and Data Mining<sup>5†</sup>  
CPSC 536A-3 Topics in Algorithms and Complexity – Bioinformatics<sup>†</sup>  
MEDG 505-3 Genome Analysis<sup>1†</sup>  
MBB 331-3 Molecular Biology<sup>4</sup>  
MBB 435-3 Genomic Analysis (or MBB 835)<sup>1</sup>  
MBB 442-3 Proteomics (or MBB 842-3)  
MBB 659-3 Special Topics in Bioinformatics<sup>2</sup>  
MBB 669-3 Special Topics in Genomics<sup>2</sup>  
MBB 679-3 Special Topics in Proteomics<sup>2</sup>  
MBB 831-3 Molecular Evolution of Eukaryote Genomes  
MBB 832-3 Molecular Phylogeny and Evolution  
STAT 547-3 Statistical Problems Arising in Genomics<sup>†</sup>  
STAT 890-4 Statistics: Selected Topics<sup>3</sup>

<sup>1</sup> credit will be given for only one of MBB 435 or MEDG 505

<sup>2</sup> special topics courses are given upon student demand and instructor availability

<sup>3</sup> STAT 890 is a Special Topics course and course content will vary by course offering

<sup>4</sup> CPSC 304, CMPT 354 and MBB 331 will not count toward elective requirements; they will be recommended if the student is deficient in either computational or life sciences background

<sup>5</sup> credit will be given for only one of CMPT 740 and CPSC 504

<sup>†</sup> course is completed at University of British Columbia

### Practicum Courses

In addition to elective courses as outlined above, students complete the first practicum course in the second term, and the second practicum course in the third term, dependent upon course offerings. Students complete the practicums by choosing at least two of

CMPT 611-6 Research Rotation I (or MBB 611)\*  
CMPT 612-6 Research Rotation II (or MBB 612)\*  
CMPT 613-6 Research Rotation III (or MBB 613)\*

\*course is completed at Simon Fraser University, University of BC, and BC Cancer Agency

## Courses Offered by Other Departments

Upon the supervisory committee's recommendation and with the department graduate studies committee's approval, MBB students may complete relevant courses from other departments toward their degree. Some courses of interest may include, but are not limited to CHEM 752, 754 and 811.

## Graduate Course Work at Other Universities

With the supervisory committee's recommendation and department graduate studies committee approval, up to six units completed elsewhere that didn't result in a degree may apply to requirements, but not exceed more than half the required units in addition to MBB 801, 802 and 806.

## Department of Physics

P8429 Shrum Science Centre, 778.782.4465 Tel, 778.782.3592 Fax, www.physics.sfu.ca

### Chair

B.J. Frisken BSc (Qu), MSc (Northwestern), PhD (Br Col)

### Graduate Program Chair

J.S. Dodge AB (Harv), MA, PhD (Stan)

### Faculty and Areas of Research

See "Department of Physics" on page 203 for a complete list of faculty.

L.E. Ballentine\* – dynamical chaos, foundations of quantum mechanics  
J.L. Bechhoefer – liquid crystals, soft condensed matter, pattern formation  
D.H. Boal\* – statistical mechanics and biophysics  
D. Broun – highly correlated electronic materials, high  $T_c$  superconductivity  
E.D. Crozier\* – condensed matter, structure and electronic properties, EXAFS  
J.S. Dodge – superconductivity, magnetism, optical spectroscopy  
E.G. Emberly – biophysics, nanostructures  
N. Forde – optical tweezers, biophysics  
B.J. Frisken – soft condensed matter  
A.V. Frolov – theoretical cosmology at the particle physics boundary  
P. Haljan – quantum computing, laser cooling and trapping of ions  
M.E. Hayden – magnetic resonance  
B. Heinrich\* – molecular beam epitaxy, superconductivity, surface physics  
D.J. Huntley\* – luminescence dating, archaeometry  
I. Herbut – condensed matter theory  
K.L. Kavanagh – materials science, nanostructures  
M. Kennett – theories of disordered and out-of-equilibrium systems  
G. Kirczenow – condensed matter theory  
J. McGuirk – ultra cold degenerate gases  
P. Mooney – semiconductor physics  
D. O'Neil – experimental high energy physics  
M. Plischke – condensed matter theory, statistical physics  
L.E. Pogosian – theoretical cosmology at the particle physics boundary  
J.E. Sonier – MuSR spectroscopy, high  $T_c$  superconductivity  
B. Stelzer – high energy physics, subatomic particle physics, collider experiments  
J.L. Thewalt – biophysics, NMR studies of membranes  
M.L.W. Thewalt – semiconductor physics  
H.D. Trotter – lattice quantum chromodynamics, phenomenology of strong and weak interactions, field theoretical study of non-Abelian gauge theories

M. Vetterli – intermediate energy and particle physics  
 K.S. Viswanathan\* – high energy theory, classical and quantum gravity  
 S. Watkins – semiconductor physics  
 M. Wortis\* – solid state theory, statistical mechanics, surface physics, membranes, biophysics

#### Adjunct Faculty

B.S. Davids – experimental nuclear structure and astrophysics  
 B.K. Jennings – theoretical intermediate energy physics  
 R.M. Woloshyn – theoretical particle physics, Lattice field theory  
 M. Scheinfein – magnetism, nanostructures  
 M. Zuckermann – solid state physics, statistical mechanics, biophysics, lipid membranes

#### Associate Members

For areas of research, refer to the department listed.

C. Andreoiu, Department of Chemistry  
 M. Eikerling, Department of Chemistry  
 D.E. Nelson, Department of Archaeology  
 E. Palsson, Department of Biology

\*emeritus

## Degrees Offered

The Department of Physics offers programs leading to the MSc and PhD degrees in physics.

## MSc Program

### Admission Requirements

Applicants have second class standing or equivalent in honors physics, honors mathematics and physics, engineering physics, or electrical engineering. See "Graduate General Regulations" on page 219.

### Degree Requirements

#### Course Work

The minimum requirement is 17 units, of which at least 14 must be graduate and will normally include  
 PHYS 801-2 Student Seminar  
 PHYS 810-3 Fundamental Quantum Mechanics  
 PHYS 821-3 Electromagnetic Theory

and one of

PHYS 812-3 Introduction to Quantum Field Theory  
 PHYS 841-3 Equilibrium Statistical Mechanics

Additional undergraduate courses, including prerequisites to required graduate courses, may be required to remedy deficiencies in background.

#### Research

Part of the program is conducting original research. A thesis describing this research is submitted and defended at the program's conclusion.

## PhD Program

### Admission Requirements

To qualify for admission, a student must have a master's degree or the equivalent in physics. Also see "Graduate General Regulations" on page 219.

### Degree Requirements

#### Course Work

The minimum requirement consists of nine graduate units beyond the master's or equivalent degree. Students who have not previously received credit for PHYS 801 must complete this course as well. Faculty of Science requirements must also be met.

#### Research

A major portion of this program is conducting original research. A thesis, embodying new and important results or original research, must be presented and defended at the conclusion of the degree program.

## Admission from a Master's Program to the PhD Program

A student may be admitted from an MSc with a 3.67 CGPA calculated over a minimum of 15 graduate units, and approval of the student's supervisory committee and senate graduate studies committee.

## Language Requirement

In certain areas of research, familiarity with languages other than English may be important so a student's supervisory committee may require a reading knowledge of one such language.

## Biophysics

Students who wish to undertake biophysics interdisciplinary work may apply to the Department of Physics or the Department of Biological Sciences. Those who wish to work in biophysics under special arrangements should see "1.3.4 Admission to a Doctoral Program" on page 220.

## Chemical Physics

Apply to the Departments of Physics or Chemistry for chemical physics interdisciplinary work. For chemical physics under special arrangements, see "1.3.4 Admission to a Doctoral Program" on page 220.

# Department of Statistics and Actuarial Science

K10545 Shrum Science Centre, 778.782.3803 Tel, 778.782.4368 Fax, www.stat.sfu.ca

#### Chair

R.A. Lockhart BSc (Br Col), MA, PhD (Calif)

#### Graduate Program Chair

D. Bingham BSc (C'dia), MSc (Car), PhD (S Fraser), Canada Research Chair

#### Faculty and Areas of Research

See "Department of Statistics and Actuarial Science" on page 206 for a complete list of faculty.

R. Altman – correlated discrete data and latent variable models

D. Bingham – design of experiments, industrial statistics, Bayesian methods

D.A. Campbell – functional data analysis, dynamic systems models, time-frequency representations

J. Cao – estimating differential equations, data analysis, statistical genomics, Bayesian inference

C.B. Dean – spatial statistics, disease mapping, statistics in health

J. Graham – statistical genetics

J. Hu – incomplete data analysis, interim reviews and related design issues in health studies

R.A. Lockhart – goodness-of-fit testing, inference for stochastic processes, large sample theory

T.M. Loughin – categorical data analysis, design and analysis of experiments, statistical computing

Y. Lu – risk theory, stochastic modeling, statistical applications

W.B. McNeney – biostatistics, epidemiology and epidemiologic study design

G. Parker – financial risk management, interest rate risk

R.D. Routledge – biometrics, estimating the sizes of animal populations

C.J. Schwarz – modelling of animal population dynamics, capture-recapture methods

M.A. Stephens\* – goodness-of-fit testing and directional data

T.B. Swartz – statistical computing, Bayesian methods and applications

B. Tang – design of experiments, industrial statistics  
 S. Thompson – network sampling, estimation of animal population size  
 C. Tsai – risk theory, ruin theory, stochastic processes in insurance and finance.  
 L. Zeng – statistical methods of the longitudinal data analysis, estimating functions, transition models, missing data

#### Adjunct Professors

R.F. Balshaw – life history data, longitudinal data, mixed models  
 S.G. Banneheka  
 P. Gill – sports statistics, round robin models, spatio-temporal modelling  
 F. He – forestry, landscape evolution  
 N.W. Hengartner – spatial and environmental statistics, errors in variables, classifications, inverse problems, nonparametric statistics  
 J.J. Spinelli – biostatistics, epidemiology, goodness-of-fit  
 \*emeritus

## Admission Requirements

See "1.3.4 Admission to a Doctoral Program" on page 220 for admission requirements. Applicants whose first language is not English normally submit the Test of English as a Foreign Language results.

Applicants with degrees in areas other than statistics are encouraged to apply provided they have some formal training in statistical theory and practice.

## Actuarial Science

### MSc Program

Students seeking actuarial science graduate studies may, with supervisory committee and graduate studies committee approval, follow the statistics program (shown below), but with requirements and project content adjusted for actuarial science as follows. Students normally complete 30 units including

STAT 801-4 Statistics

and at least two of

ACMA 820-4 Stochastic Analysis of Insurance Portfolios

ACMA 821-4 Advanced Actuarial Models

ACMA 822-4 Risk Measures and Ordering

and at least two of

ACMA 850-4 Actuarial Science, Selected Topics

STAT 802-4 Multivariate Analysis

STAT 804-4 Time Series Analysis

STAT 805-4 Non-Parametric Statistics and Discrete Data Analysis

STAT 806-4 Lifetime Data Analysis

STAT 870-4 Applied Probability Models

STAT 890-4 Statistics: Selected Topics

As well, students submit and successfully defend a project based on an actuarial science problem (see "1.10.1 Thesis Examination" on page 225).

## Statistics

### MSc Program

The program offers a wide range of statistical techniques and provides experience in practical statistics application. It teaches statistical expertise for careers in either theoretical or applied statistics.

Students complete at least 30 units in statistics and related fields beyond those that were completed for the bachelor's degree. Of these 30, at least 24 will be graduate courses or seminars, and the remaining six are chosen from graduate courses or those 400 division undergraduate courses which may be

completed for credit for the BSc in statistics. Normally these courses will include

STAT 801-4 Statistics

STAT 811-2 Statistical Consulting I

STAT 812-2 Statistical Consulting II

and at least four of

STAT 802-4 Multivariate Analysis

STAT 804-4 Time Series Analysis

STAT 805-4 Non-Parametric Statistics and Discrete

Data Analysis

STAT 806-4 Lifetime Data Analysis

STAT 870-4 Applied Probability Models

STAT 890-4 Statistics: Selected Topics

STAT 891-2 Seminar

As well, students must submit and successfully defend a project based on some problem of statistical analysis, as outlined in the *Graduate General Regulations* (see “1.10.1 Thesis Examination” on page 225). This problem will often arise out of the statistical consulting service.

Students with a good undergraduate background in statistics will normally complete the course work in four terms. The project, including the defence, is expected to require two terms or less. Students with backgrounds in other disciplines, or with an inadequate background in statistics, may be required to complete certain undergraduate courses in the department in addition to the above requirements.

### PhD Program

A candidate will generally obtain at least 30 units beyond those for the bachelor's degree. Of these, at least 22 will be graduate courses and the remaining eight may be from graduate courses or those 400 division undergraduate courses which may be completed for credit for the BSc in statistics. Students who hold an MSc in statistics are deemed to have earned 18 of the 22 graduate units and four of the eight undergraduate or graduate units required.

Candidates normally pass a general examination covering a broad range of senior undergraduate

statistics material. A candidate ordinarily cannot complete the general exam more than twice. This exam is normally completed within four full time terms of initial PhD enrolment.

Students submit and successfully defend a thesis which will embody a significant contribution to statistical knowledge.

See “Graduate General Regulations” on page 219 for further information and regulations.

### Co-operative Education

Students in the MSc or PhD program may obtain work experience during their graduate studies by participating in the co-operative education program. Employment lasting one or two terms with government agencies, companies or other organizations employing statisticians is arranged for qualified students. Such employment often provides the problem which forms the basis of the MSc project.



# Course Catalogue



# Course Catalogue

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## Actuarial Mathematics ACMA Faculty of Science

### ACMA 210-3 Mathematics of Compound Interest

Measurement of interest, present value. Equations of value. Basic annuities: immediate, due, perpetuity. General annuities. Yield rates: cash flow analysis, reinvestment rate, portfolio and investment year methods. Amortization schedules and sinking funds. Bonds and other securities. Applications: real estate mortgages depreciation methods. Interest rate disclosure and regulation in Canada. Covers the interest theory portion of Exam FM of the Society of Actuaries. Prerequisite: MATH 152. Students with credit for ACMA 310 may not take this course for further credit. Quantitative.

### ACMA 315-3 Credibility Theory

Limited fluctuation credibility theory: full credibility, partial credibility. Greatest accuracy credibility theory: the Bayesian methodology, the credibility premium, the Buhlmann model, the Buhlmann-Straub model, exact credibility, linear versus Bayesian versus no credibility. Empirical Bayes parameter estimation: nonparametric estimation, semiparametric estimation, parametric estimation. Simulation: basics of simulation, simulation in actuarial modeling. Covers part of the syllabus for Exam C of the Society of Actuaries, and Exam 4 of the Casualty Actuarial Society. Prerequisite: STAT 285. Quantitative.

### ACMA 320-5 Actuarial Mathematics I

Survival distributions: age at death, life tables, fractional ages, mortality laws, select and ultimate life tables. Life insurance: actuarial present value function (apv), moments of apv, basic life insurance contracts, portfolio. Life annuities: actuarial accumulation function, moments of apv, basic life annuities. Net annual premiums: actuarial equivalence principle, loss function, accumulation type benefits. Actuarial reserves: prospective loss function, basic contracts, recursive equations, fractional durations. Covers part

of the syllabus for Exam M of the Society of Actuaries and Exam 3 of the Casualty Actuarial Society, and covers practical applications such as computational aspects of pricing and reserving, and risk measurement of insurance portfolios. Prerequisite: MATH 232, STAT 285, and ACMA 210 (with a grade of C+ or higher). Quantitative.

### ACMA 335-3 Risk Theory

Basic distributional quantities: moments, percentiles, generating functions and sums of random variables. Classifying and creating distributions. Frequency and severity with coverage modifications: deductibles, the loss elimination ratio and the effect of inflation for ordinary deductibles, policy limits, coinsurance. Aggregate loss models. Multi-state transition models with actuarial applications: non-homogeneous Markov chains, cash flows and their actuarial present values. The exponential distribution and the Poisson process. Covers part of the syllabus for Exam M of the Society of Actuaries, and Exam 3 of Casualty Actuarial Society. Prerequisite: ACMA 320. Quantitative.

### ACMA 395-3 Special Topics in Actuarial Science

Topics in areas of actuarial science not covered in the regular certificate curriculum of the department. Prerequisite: dependent on the topics covered.

### ACMA 425-3 Actuarial Mathematics II

Actuarial reserves: allocation of the loss to the policy years. Multiple life functions: joint-life, last-survivor. Multiple decrement models: stochastic and deterministic approaches, associated single decrement, fractional durations. Valuation theory for pension plans. Insurance models including expenses: gross premiums and reserves, type of expenses, modified reserves. Nonforfeiture benefits and dividends: equity concept, cash values insurance options, asset shares, dividends. Covers part of the syllabus for Exam M of the Society of Actuaries and Exam 3 of the Casualty Actuarial Society. Prerequisite: ACMA 320. Quantitative.

### ACMA 445-3 Loss Models: Estimation and Selection

Quality of an estimator: unbiasedness, asymptotic unbiasedness, consistency, means squared error, uniform minimum variance. Confidence interval. Tests of hypotheses. Estimation for complete data. Estimation for grouped data. Estimation for modified data: Kaplan-Meier estimator, variances and confidence intervals of the empirical estimator, kernel density estimator. Parameter estimation. Variance of the estimators and confidence intervals. Model selection: graphical procedures, goodness-of-fit test, likelihood ratio test. Interpolation and smoothing. Covers part of the syllabus for Exam C of the Society of Actuaries and Exam 4 of the Casualty Actuarial Society. Prerequisite: ACMA 320. Quantitative.

### ACMA 465-3 Mathematics of Demography

Data: Sources and Errors. Measures of mortality and fertility: Crude rates, Age-specific mortality rates, Adjusted measures of mortality. Construction of Life Tables from census data: 1989-91 U.S. Life Table, 1990-92 Canadian Life Table. Stationary Population Theory: survivorship group, Lexis diagram. Stable Population Theory: Sharpe-Lotka theorem, growth rate, quasi-stable populations. Population Projections: logistic curve, component method. Uses of Census Data: Funding Social Security. Prerequisite: ACMA 320. Cannot repeat for credit if taken as STAT 490 or ACMA 490 previously. Quantitative.

### ACMA 470-3 Property and Casualty Insurance

Ratemaking: terminology, process, trend, ultimate losses, expense provisions, profit and contingencies, overall rate indications, classification rates, increased limits. Individual risk rating: prospective systems, retrospective rating, design. Loss Reserving: accounting concepts, definitions, principles, loss reserving process. Risk classification: relationship to other mechanisms, criteria for selecting rating variables, examples, efficiency, estimating class relativities. Covers part of the syllabus for Exam 5 of

Casualty Actuarial Society. Prerequisite: ACMA 320. Cannot repeat for credit if taken as STAT 490 or ACMA 490 previously. Quantitative.

### ACMA 475-3 Theory of Pension

Overview of pension plans: design, funding, regulation, accounting standards. Pension funding methods: actuarial cost methods, terminal funding method. Individual actuarial cost methods: accrual benefit cost method, entry-age actuarial cost method, unit-credit method, individual-level-premium method, attained-age-normal method. Group actuarial cost methods. Prerequisite: ACMA 320. Corequisite: ACMA 425. Cannot repeat for credit if taken as STAT 490 or ACMA 490 previously. Quantitative.

### ACMA 490-3 Selected Topics in Actuarial Science

The topics included in this course will vary from term to term depending on faculty availability and student interest. Prerequisite: dependent on the topic covered.

### ACMA 495-3 Directed Studies in Actuarial Science

Independent study and/or research in topics chosen in consultation with the supervising instructor. Prerequisite: written permission from the Department of Statistics and Actuarial Science undergraduate curriculum committee.

### ACMA 820-4 Stochastic Analysis of Insurance Portfolios

Life insurance models. Interest rate models for life insurance: time series, stochastic differential equations, estimation. Portfolios of identical policies. Diversified portfolios. Prerequisite: ACMA 320.

### ACMA 821-4 Advanced Actuarial Models

Advanced non-life insurance mathematics. Individual risk models, collective risk models, ruin models. Actuarial reserve models: Bonus-malus system, IBNR techniques. Generalized linear models in Actuarial Science. Prerequisite: ACMA 335.

### ACMA 822-4 Risk Measures and Ordering

Actuarial risks. Insurance premium calculation principles and properties. Risk measures and ordering. Applications. Prerequisite: ACMA 335.

### ACMA 850-4 Actuarial Science: Selected Topics

## Applied Legal Studies ALS Faculty of Arts and Social Sciences

### ALS 601-3 Canadian Legal System

Designed to give students a systematic knowledge of the workings of Canadian law and the Canadian legal system. Provides a comprehensive discussion of the various principles and schools of jurisprudence, and will canvass the basic legal institutions in Canada. Considers the history of Canadian law, the development of the framework of the Canadian constitution, the Constitution itself, the roles and responsibilities of Canadian courts and the roles and responsibilities of members of the legal profession. Ensures that students gain a comprehensive understanding of the nature of legal reasoning, the doctrines of precedent and stare decisis, and the key rules and principles of statutory interpretation. Students will also be given a systematic introduction to four substantive areas of law: criminal law, administrative law, family law, and tort law.

### ALS 602-3 Legal Research and Writing

Designed to give students a solid foundation in legal research and writing skills. Provides students with an overview of how both legislation and case law are created, including consideration of the basic principles of legal analysis. Proper legal research techniques and strategies will be considered for both

primary and secondary legal sources. Consideration will also be given to the many on-line legal research resources. Finally, students will receive instruction in the general principles of legal writing and apply these principles to different types of legal writing including analytical writing and the drafting of legal documents.

### ALS 603-3 Legal Philosophy

Designed to give students a solid grounding in the central themes of legal philosophy. Examines the major schools of jurisprudence. Affords an opportunity to reflect in a disciplined and critical way on the structure and functions of law, legal institutions and systems. Involves an analysis of the nature of legal reasoning and discourse, and looks to the connections between law and morality.

### ALS 610-3 Contracts

Introduces students to the fundamental principles underlying Contract Law in Canada, and the practical application of such principles in the commercial environment. Students will learn the essential elements of what makes an "enforceable contract" such as offer and acceptance, certainty of terms, form and consideration as well as those things that may well make a contract unenforceable, such as misrepresentation, frustration, duress and privacy issues. Warranties, representations, conditions and remedies for breach of contract will also be covered, as will contractual interpretation.

### ALS 611-3 Real Property I

Involves the study of basic principles and statutory regimes which govern the institution of Real Property. Topics addressed will include: the legal concept of land, the nature of and rationale for property, transfer of interests in land, registration of title and the nature of the land title system, the acquisition of estates in land, co-ownership of land, and future interests.

### ALS 612-3 Real Property II

Deals with the law relating to vendors and purchasers of real estate, particularly as affected by the substantive law of mortgages, and considers the remedies available to vendors, purchasers, mortgagors and mortgagees, as well as the role and duties of real estate agents. Also deals with residential and commercial tenancies.

### ALS 615-3 Personal Planning

Provides an overview of the law of succession and familiarizes students with the principles necessary to competently advise clients about the transfer of property on death and to draft a will that meets the client's objectives. Powers of Attorney and Representation Agreements as planning tools will be examined.

### ALS 620-3 Selected Topics in Applied Legal Studies

Designed to give students a detailed understanding of key topics in applied legal studies, with a particular emphasis upon areas of law and practice that are of special interest to Notaries Public. Topics may change from year to year and may vary by instructor but it is anticipated that topics will include, the law of agency; current issues in tax law; the law affecting business/not for profit incorporation, and business associations.

### ALS 630-3 Topics in Legal Practice

Builds on the theoretical understanding students have by exploring how the legal advisor assists clients in effectively dealing with their issues. Topics range from the purpose of legal professionals to developing sustainable strategies for the operation of a legal practice.

### ALS 631-3 MA Examination

A final examination on core subjects, which will normally occur towards the end of the student's fourth term in the program.

## Applied and Computational Mathematics APMA Faculty of Science

### APMA 900-4 Advanced Mathematical Methods I

Hilbert spaces. Calculus of variations. Sturm-Liouville problems and special functions. Green's functions in one dimension. Integral equations. Prerequisite: MATH 314 or equivalent. Students with credit for MATH 900 may not take APMA 900 for further credit. Recommended: MATH 419.

### APMA 901-4 Advanced Mathematical Methods II

First order partial differential equations. Characteristics. Eigenfunction expansions and integral transforms. Discontinuities and singularities; weak solutions. Green's functions. Variational methods. Prerequisite: MATH 314 or equivalent. Students with credit for MATH 901 may not take APMA 901 for further credit. Recommended: MATH 418.

### APMA 902-4 Applied Complex Analysis

Review of complex power series and contour integration. Conformal mapping, Schwarz-Christoffel transformation. Special functions. Asymptotic expansions. Integral transform. Prerequisite: MATH 322 or equivalent. Students with credit for MATH 836 or 902 may not take APMA 902 for further credit.

### APMA 905-4 Applied Functional Analysis

Infinite dimensional vector spaces, convergence, generalized Fourier series. Operator Theory; the Fredholm alternative. Application to integral equations and Sturm-Liouville systems. Spectral theory. Prerequisite: MATH 900 or permission of the instructor. Students with credit for MATH 905 may not take APMA 905 for further credit.

### APMA 910-4 Ordinary Differential Equations

The solutions and properties of ordinary differential equations and systems of ordinary differential equations in the real and complex domains. Prerequisite: MATH 415 or equivalent. Students with credit for MATH 842 or 910 may not take APMA 910 for further credit.

### APMA 912-4 Partial Differential Equations

An advanced course on partial differential equations. Topics covered usually will include quasi-linear first order systems and hyperbolic, parabolic and elliptic second-order equations. Prerequisite: MATH 901 or permission of the instructor. Students with credit for MATH 845 or 912 may not take APMA 912 for further credit.

### APMA 920-4 Numerical Linear Algebra

Direct and iterative methods for the numerical solution of linear systems, factorization techniques, linear least squares problems, eigenvalue problems. Techniques for parallel architectures. Students with credit for MATH 850 or 920 may not take APMA 920 for further credit.

### APMA 921-4 Numerical Solution of Ordinary Differential Equations

Study of the practical numerical methods for solving initial and boundary value problems for ordinary differential equations. Students with credit for MATH 851 or 921 may not take APMA 921 for further credit.

### APMA 922-4 Numerical Solution of Partial Differential Equations

Analysis and application of numerical methods for solving partial differential equations. Finite difference methods, spectral methods, multigrid methods. Students with credit for MATH 852 or 922 may not take APMA 922 for further credit.



**APMA 923-4 Numerical Methods in Continuous Optimization**

Numerical solution of systems of nonlinear equations, and unconstrained optimization problems. Newton's method, Quasi-Newton methods, secant methods, and conjugate gradient algorithms. Students with credit for MATH 853 or 923 may not take APMA 923 for further credit.

**APMA 929-4 Selected Topics in Numerical Analysis**

Study of a specialized area of numerical analysis such as computational fluid dynamics, approximation theory, integral equations, integral transforms, computational complex analysis, special functions, numerical quadrature and multiple integrals, constrained optimization, finite elements methods, sparse matrix techniques, or parallel algorithms in scientific computing.

**APMA 930-4 Fluid Dynamics**

Basic equations and theorems of fluid mechanics. Incompressible flow. Compressible flow. Effects of viscosity. Prerequisite: MATH 361 or equivalent. Students with credit for MATH 930 may not take APMA 930 for further credit. Recommended: MATH 462.

**APMA 934-4 Selected Topics in Fluid Dynamics**

Study of a specialized area of fluid dynamics such as hydrodynamic stability, multiphase flow, non-Newtonian fluids, computational fluid dynamics, boundary-layer theory, magnetic fluids and plasmas, bio- and geo-fluid mechanics, gas dynamics. Prerequisite: APMA 930 or permission of the instructor.

**APMA 935-4 Analysis and Computation of Models**

Analysis of models from the natural and applied sciences via analytical, asymptotic and numerical studies of ordinary and partial differential equations. Prerequisite: MATH 418 and MACM 316 or equivalent. Students with credit for MATH 883 or 935 may not take APMA 935 for further credit.

**APMA 939-4 Selected Topics in Mechanics of Solids**

Study of a specialized area of the mechanics of solids such as composite materials, micromechanics, fracture, plate and shell theory, creep, computational solid mechanics, wave propagation, contact mechanics. Prerequisite: APMA 935 or permission of the instructor.

**APMA 981-4 Selected Topics in Continuum Mechanics****APMA 982-4 Selected Topics in Mathematical Physics****APMA 990-4 Selected Topics in Applied Mathematics****Archaeology ARCH  
Faculty of Arts and Social  
Sciences****ARCH 100-3 Ancient Peoples and Places**

A broad survey of human cultural development from the late Palaeolithic/PalaeoIndian periods (ca 40,000 BP) to the rise of civilization and empires, in both the Old and New Worlds. Breadth-Social Sciences.

**ARCH 131-3 Human Origins**

A non-technical survey of the primate background of humans, fossil primates, and fossil humans, and the associated evidence of cultural development. An introduction to physical anthropology. Breadth-Social Sciences/Science.

**ARCH 200-3 Special Topics in World Prehistory**

Non-specialized introductory summaries of selected regional topics in world prehistory. Breadth-Social Sciences.

**ARCH 201-3 Introduction to Archaeology**

A survey of methods used by archaeologists to discover and interpret the past. Examples will be drawn from selected sites and cultures around the world. Students who have taken ARCH 101 may not enrol in ARCH 201. Breadth-Social Sciences.

**ARCH 226-3 The Prehistory of Religion: Shamans, Sorcerers and Saints**

Charts the emergence and changes in the expression of human religious behavior. It covers the earliest rituals of the Palaeolithic, the importance of fertility cults, ancestor cults, alliance rituals, shamans, witchcraft, and monotheism. Prerequisite: any lower division archaeology or anthropology course. Breadth-Humanities/Social Sciences.

**ARCH 252-3 Ancient Egypt and Africa**

Exploration of the major cultural developments in Africa from the origin of humankind to the rise of several ancient civilizations, with special emphasis on ancient Egypt. Students are exposed to various approaches taken by palaeoanthropologists, prehistoric archaeologists, historians and Egyptologists. Prerequisite: Students who have taken ARCH 200 under this title may not take this course for further credit. Breadth-Humanities/Social Science.

**ARCH 272-3 Archaeology of the Old World**

A survey of the major centres of Old World cultural development from the Palaeolithic to the Bronze Age. Basic concepts used in reconstructing prehistoric cultures, and the artifactual and contextual evidence for the development of culture. Prerequisite: ARCH 100 or 201. Breadth-Social Sciences.

**ARCH 273-3 Archaeology of the New World**

A survey of prehistoric cultures of North and South America. The peopling of the New World, the rise of the pre-Columbian civilizations of Mexico and Peru, and the cultural adaptations by prehistoric populations to other parts of the New World. Prerequisite: ARCH 100 or 201. Breadth-Social Sciences.

**ARCH 301-3 Prehistoric and Indigenous Art**

Art styles and traditions of prehistoric and preliterate peoples in one or more world cultural areas. Breadth-Humanities.

**ARCH 302-3 Art of Ancient Civilizations**

A descriptive survey of the art and architecture of major ancient civilizations in Africa, Asia, the Mediterranean basin and the Americas. Prerequisite: students with credit for ARCH 331 (special topics course) may not take ARCH 302 for further credit. Part of the course content will be delivered via WebCT and the World Wide Web. Students must have frequent broadband access.

**ARCH 311-5 Archaeological Dating**

A study of various scientific methods of dating archaeological samples, including Carbon 14, thermoluminescence, obsidian-hydration, fission track, potassium-argon, magnetic, and other dating techniques.

**ARCH 330W-3 Prehistory of Latin America**

Intensive study of the prehistoric cultures of Latin America. Emphasis will be on the development of the civilizations of prehistoric Mexico and Peru. Prerequisite: ARCH 273 or LAS 140. ARCH 330 is identical to LAS 330, and students cannot receive credit for both courses. Writing.

**ARCH 332-3 Special Topics in Archaeology I**

This course will be offered from time to time to meet special needs of students and to make use of

specializations of visiting faculty members. Prerequisite: to be announced.

**ARCH 333-3 Special Topics in Archaeology II**

This course will be offered from time to time to meet special needs of students and to make use of specializations of visiting faculty members. Prerequisite: to be announced.

**ARCH 334-3 Special Topics in Archaeology III**

This course will be offered from time to time to meet special needs of students and to make use of specializations of visiting faculty members. Prerequisite: to be announced.

**ARCH 335-5 Special Laboratory Topics in Archaeology**

This is a laboratory course that will be offered from time to time to meet special needs of students and to make use of specializations of visiting faculty members. Prerequisite: to be announced.

**ARCH 336-3 Special Topics in Prehistoric and Indigenous Art**

Art styles and traditions of prehistoric and preliterate peoples in selected world cultural areas. Prerequisite: to be announced. Breadth-Humanities.

**ARCH 338-3 Archaeology of China**

Reviews major archaeological discoveries of China concerning human evolution, the origins of agriculture, the development of early complex societies, and the origin of Chinese civilization. The focus is prehistoric archaeology but includes the early historic/dynastic periods. Prerequisite: ARCH 131 or 201. Students who have taken ARCH 333 or 335 under this topic may not take this course for further credit.

**ARCH 340-5 Zooarchaeology**

An introduction to the study of animal remains from archaeological sites. Coverage of the major concepts and methods used in the study of animal remains and detailed practical coverage of the vertebrate skeleton. Prerequisite: ARCH 201.

**ARCH 344-3 Primate Behaviour**

The evolution of the primate order and the ecology and behavior characterizing the different grades of primates: prosimians, monkeys, and apes. Current trends in interpreting primate behavior are emphasized. Prerequisite: ARCH 131 or any lower division biology course.

**ARCH 348-5 Archaeological Conservation**

An introduction to archaeological conservation, the processes affecting the condition of archaeological materials prior to excavation, during excavation, during analysis, exhibition and during reposition. Successful completion of this course will give archaeologists a good understanding of the various materials they encounter during excavation and how to preserve these artifacts and other materials. It will not qualify students to be professional archaeological conservators. Prerequisite: six units in Archaeology, including ARCH 201. Students who have taken ARCH 335-5 Special Topics in Archaeology: Archaeological Conservation may not take ARCH 348-5 for further credit.

**ARCH 349-5 Management of Archaeological Collections**

The philosophy, policies and practices of the care of archaeological collections. This lecture and laboratory course treats the practical problems of designing museum programs within a framework of legal responsibilities for collections. Contemporary issues such as repatriation will be discussed. Prerequisite: three 200 division archaeology courses.

**ARCH 350-3 Practicum I**

First term of work experience in the Archaeology Co-operative Education Program. Units for this course do not count towards the units required for an SFU degree. Prerequisite: normally 45 units with a

CGPA of 3.0 and the following courses are recommended: both ARCH 131 and 201; either ARCH 272 or 273; and three of ARCH 372, 373, 376, 377, 386, 442.

### ARCH 351-3 Practicum II

Second term of work experience in the Archaeology Co-operative Education Program. Units for this course do not count towards the units required for an SFU degree. Prerequisite: normally 45 units with a CGPA of 3.0 and ARCH 350.

### ARCH 360-5 Native Cultures of North America

A descriptive study of the cultures of North American natives north of Mexico, as they were at initial European contact, organized on a culture area basis. Native groups in each area will be discussed in terms of languages, population estimates, early post-contact history and its impact on traditional ways of life, dominant ethnographic economic/adaptive emphases, socio-political organization, religion, ceremony and warfare. Prerequisite: ARCH 201 and 273.

### ARCH 365-3 Ecological Archaeology

Deals with the techniques for reconstruction of past environments, as well as the effect of environment on past settlements and people. Environment as considered in the course will encompass the presence of other settlements, and deal with relationships among settlements. Prerequisite: ARCH 201.

### ARCH 370-3 Western Pacific Prehistory

The exploration of prehistoric developments in the Western Pacific region, beginning with the first traces of humans, dealing with problems in the rise of civilization, and finally, tracing the voyages of the early Pacific navigators. Prerequisite: ARCH 272.

### ARCH 372-5 Material Culture Analysis

Analysis and interpretation of archaeological material culture. This lecture and laboratory course combines the practical problems of recognition and interpretation of archaeological specimens, typology, seriation, and statistical procedures with the basic principles of archaeological theory. Prerequisite: ARCH 201.

### ARCH 373-5 Human Osteology

A detailed study of the human skeleton with emphasis on lab and field techniques. Prerequisite: ARCH 131.

### ARCH 376-5 Quantitative Methods in Archaeology

Theory, method, and operation of the application of statistical techniques to the description, classification, analysis, and interpretation of archaeological data. Prerequisite: ARCH 201, and either STAT 203 (formerly 103) or PSYC 210. Quantitative.

### ARCH 377-5 Historical Archaeology

An introduction to theory and method in North American historical archaeology. Laboratory instruction is provided in historic artifact analysis and interpretation. Prerequisite: ARCH 201 and one lower division ARCH course.

### ARCH 378-3 Pacific Northwest North America

The prehistory and cultural traditions of the region. The content, antecedents, relationships, and changes in these cultures through time. Technological, socio-economic, and environmental factors in culture growth. Prerequisite: ARCH 273.

### ARCH 379-3 Archaeology of the American Southwest

The prehistory and cultural traditions of the region. The content, antecedents, relationships, and changes in these cultures through time. Technological, socio-economic, and environmental factors in culture growth. Prerequisite: ARCH 273.

### ARCH 383-3 Molecular Bioarchaeology

Introduces molecular biology techniques used to analyze DNA to address archaeological questions

and applications to degraded DNA samples for forensic identification of human remains and conservation of endangered species. Prerequisite: ARCH 131 or 201. Students who have taken ARCH 334 or 335 under this topic may not take this course for further credit.

### ARCH 385-5 Paleoanthropology

The relationship between culture and biology in prehistoric human evolution. The recognition and critical evaluation of the significance of the similarities and differences among fossil human types. Prerequisite: ARCH 131 and 272.

### ARCH 386-3 Archaeological Resource Management

Surveys the origins, implementations, and need for archaeological heritage legislation on an international and national scale. Topical issues associated with contract archaeology, public archaeology, native heritage, and avocational societies are incorporated. Prerequisite: ARCH 201.

### ARCH 390-5 Archaeobotany

An introduction to the recovery and analysis of macroscopic archaeological plant remains. The major methodological and interpretive issues in archaeobotany will be covered, with an emphasis on plant domestication in selected regions of the world. Prerequisite: ARCH 201 and either 272 or 273.

### ARCH 432-5 Advanced Physical Anthropology

An intensive investigation of the theory and problem areas in physical anthropology. Prerequisite: ARCH 373 and either 344 or 385.

### ARCH 433-6 Background to Field Work

Lectures cover the archaeological background and rationale for specific field research questions, the critical relationship in any field project between the research questions asked and the methods and techniques employed, and the craft of field work including use of equipment, specific excavating, recording and cataloguing techniques, field safety and camp life. Prerequisite: normally taken concurrently with ARCH 433 and 435; ARCH 131 and 201; at least one group I course, permission of the department.

### ARCH 434-3 Exercises in Mapping and Recording

A series of exercises in which the student must demonstrate the ability to apply the various recording and mapping skills covered in the course. The graded exercises are done individually and in teams, both on-campus and in the field. Prerequisite: normally taken concurrently with ARCH 433 and 435; ARCH 131 and 201; at least one group I course; permission of the department.

### ARCH 435-6 Field Work Practicum

A practical application of the background knowledge and specific techniques of ARCH 433 and 434. It takes place in a research oriented field excavation. Evaluation of student performance is based upon assessments of efficiency and accuracy of excavation techniques/recording procedures, and upon the student's overall contribution to the smooth functioning of the team. Prerequisite: normally taken concurrently with ARCH 433 and 434; ARCH 131 and 201; one group I course; permission of the department.

### ARCH 438-5 Geoarchaeology

This course introduces the concept of archaeological sites as active constituents in natural Quaternary land-forming and land-altering systems. Lectures will focus on all processes which may have contributed to the present geomorphological contexts of archaeological sites and their sedimentary and pedological contents. Prerequisite: ARCH 201 and either 272 or 273.

### ARCH 442-5 Forensic Anthropology

Current techniques in identification of recent human skeletal remains. Prerequisite: ARCH 373.

### ARCH 450-3 Practicum III

Third term of work experience in the Archaeology Co-operative Education Program. Units for this course do not count towards the units required for an SFU degree. Prerequisite: normally 45 units with a CGPA of 3.0 and ARCH 351.

### ARCH 451-3 Practicum IV

Fourth term of work experience in the Archaeology Co-operative Education Program. Units for this course do not count towards the units required for an SFU degree. Prerequisite: normally 45 units with a CGPA of 3.0 and ARCH 450.

### ARCH 452-5 Introduction to Paleopathology

Introduces the study of ancient and historic diseases in humans and animals as expressed in bones, teeth, mummified remains, art, and historical documents. Provides an essential foundation for differential diagnosis in skeletal biology and forensic osteology. Prerequisite: ARCH 373. Students who have taken ARCH 332 or 335 under this topic may not take this course for further credit.

### ARCH 471W-5 Archaeological Theory

The cultural, evolutionary, physical, and distributional principles which underlie the prediction and reconstruction of the past. Prerequisite: ARCH 131, 201, 272 and 273. Writing.

### ARCH 479-3 Directed Readings

Directed readings for upper level students who desire to study selected topics in depth. Prerequisite: permission of the department.

### ARCH 480-5 Directed Laboratory/Library/Field Research

A course in which students can undertake specific laboratory, library or field based research supervised by a faculty member. It is open to students from other departments. Prerequisite: permission of the department.

### ARCH 485-5 Lithic Technology

An in-depth study of how to manufacture and analyze stone tools. Includes rock and mineral identification, stone working by students, fracture mechanics, and relevance to theoretical problems. Prerequisite: ARCH 372.

### ARCH 498-5 Honors Reading

Directed readings in a selected field of study under the direction of a faculty member. Papers will be required. Prerequisite: permission of the department.

### ARCH 499-5 Honors Thesis

An honors thesis of some ten to fifteen thousand words will be written under the direction of a faculty member. Prerequisite: permission of the department.

### ARCH 871-5 Archaeological Theory

Critical evaluation of new approaches to the study of the human past.

### ARCH 872-0 Graduate Seminar in Archaeology and Prehistory

A seminar on selected problems in archaeological science and prehistory. Grading will be restricted to satisfactory/unsatisfactory (S/U).

### ARCH 873-2 Graduate Seminar in Archaeology and Prehistory

A seminar on selected problems in archaeological science and prehistory. Students may take ARCH 873 for credit once in the graduate program.

### ARCH 876-5 Research Design

Seminar focusing on the development of thesis research design and data analysis.

### ARCH 892-5 Directed Readings in Prehistory

Directed readings under the supervision of a faculty member in the prehistory of any selected region of the world.

**ARCH 893-3 Directed Readings**

Intensive readings under the supervision of a faculty member in an area of interest related to the student's program.

**ARCH 894-3 Special Topics**

This course will be offered from time to time to meet special needs of students and make use of specialization of visiting faculty members.

**ARCH 895-5 Special Topics**

This course will be offered from time to time to meet special needs of students and to make use of specialization of visiting faculty members.

**ARCH 896-5 Directed Laboratory/Library/Field Research**

Directed laboratory, library or field research under the supervision of a faculty member in an area of interest related to the student's program.

**ARCH 898-6 MA Thesis****ARCH 899-6 PhD Thesis**

## Asia-Canada ASC Faculty of Arts and Social Sciences Department of Humanities

**ASC 101-3 Introduction to Asia-Canada Studies I**

An introductory course on Asia-Canada interactions. It will survey various issues, both historical and contemporary, including those involving Asian-Canadians.

**ASC 102-3 Introduction to Asia-Canada Studies II**

An introductory course on Asian civilizations in three areas: East Asia, Southeast Asia and South Asia. A survey course, it is designed to cover multiple dimensions of people's lives and history in Asia.

**ASC 200-3 Introduction to Chinese Civilization**

An introduction to historical and cultural perspectives on China. Topics covered will include different aspects of traditional Chinese civilization with a view to understanding contemporary Chinese society. Prerequisite: 15 units.

**ASC 201-3 Introduction to Japanese Civilization**

An introduction to historical and cultural perspectives covering the basic aspects of Japan: geography, history, culture, politics, economy, etc. Prerequisite: 15 units.

**ASC 202-3 Studies in Asian Cultures**

An introduction to East, Southeast or South Asian art, literature, history or philosophy. The emphasis will be on the cultural importance of the themes covered and on their relationship to contemporary societies. Prerequisite: 15 units.

**ASC 205-3 Special Topics: Field Studies in Chinese Culture**

This course is part of the core courses offered in the China Field School covering topics on various aspects of Chinese culture and society, from Chinese medicine, martial arts, painting and calligraphy, etc. to contemporary life and local history in the area. Prerequisite: 15 units. Students who have taken GS 201 or 251 may not take this course for further credit.

**ASC 300-3 Asians and North Americans in Public Discourse**

A cross-cultural examination of the ways we perceive and represent each other in public discourse, including literature, news media, cinema, and other education and entertainment media. Prerequisite: 45 units. Recommended: one lower division ASC course.

**ASC 301-3 Asia-Canada Identities: Experiences and Perspectives**

This course will explore the experience of Asian immigrants and their children, focusing in particular on social and cultural aspects. Prerequisite: 45 units. Recommended: one lower division ASC course.

**ASC 302-3 Selected Topics in Chinese Studies**

Content will vary according to interests of faculty and students but will involve China-related study within one or more of the social science or humanities disciplines. Prerequisite: 45 units. Recommended: ASC 200.

**ASC 303-3 Selected Topics in Japanese Studies**

Content will vary according to interests of faculty and students but will involve Japanese-related study within one or more of the social science or humanities disciplines. Prerequisite: 45 units. Recommended: ASC 201.

**ASC 400-3 Selected Topics in Asia-Canada Studies**

Prerequisite: 45 units.

**ASC 401-3 Directed Studies**

Individual study. Prerequisite: ASC 101 or 102, and one ASC 300 level course and permission of the program director.

## Biological Sciences BISC Faculty of Science

**BISC 100-4 Introduction to Biology**

An introduction to the basic concepts of biology, emphasizing evolution as a unifying theme. Topics include cell structure, mitosis and meiosis, DNA structure and function, evolution and population and ecosystem ecology. Students with credit for BISC 101 or 102, or succeeding biology courses, may not take BISC 100 for further credit. Students with a C or better in Biology 12, who are considering a BISC Major, are encouraged to proceed directly to BISC 101 and 102. Breadth-Science.

**BISC 101-4 General Biology**

An introduction to the biochemical and physiological mechanisms of living organisms. Topics covered include cell structure and function, DNA replication and the flow of genetic information, enzyme function, metabolism and physiology of microorganisms, plants, and animals. Prerequisite: high school biology 12 (or equivalent) with a grade of C or better, or BISC 100. BISC 101 and 102 may be taken in any order, and are available for B-Sci credit, but are primarily designed to deliver prerequisite information to BISC majors and related departments and Faculties. Non-science students are encouraged to earn their B-Sci units in other BISC breadth courses (e.g. BISC 110, 111 and 112). Breadth-Science.

**BISC 102-4 General Biology**

Survey of the diversity of life, and its evolutionary history on earth. The student is introduced to the study of genetics, development, and evolution, giving an overview of how these processes interact to produce form and function. Also included are principles of behavior and ecological relationships of organisms to each other and their environment. Prerequisite: high school biology 12 (or equivalent) with a grade of C or better, or BISC 100. BISC 101 and 102 may be taken in any order, and are available for B-Sci credit, but are primarily designed to deliver prerequisite information to BISC majors and related departments and Faculties. Non-science students are encouraged to earn their B-Sci units in other BISC breadth courses (e.g. BISC 110, 111, and 112). Breadth-Science.

**BISC 110-3 The Evolution and Diversity of Life on Earth**

Current theories about the origin and evolution of life on this planet. The course will include a survey of the five kingdoms to emphasize both the structural and functional diversity of living forms, as well as the characteristics shared by members of each major group. Students having credit for BISC 102 may not take BISC 110 for further credit. Breadth-Science.

**BISC 111-3 Special Topics: Current Topics in Biology I**

Selected topics in biology intended to fulfil breadth requirements for non-majors. Topics will vary depending on instructor. Breadth-Science.

**BISC 112-3 Special Topics: Current Topics in Biology II**

Selected topics in biology intended to fulfil breadth requirements for non-majors. Topics will vary depending on instructor. Breadth-Science.

**BISC 202-3 Genetics**

Principles and concepts of the transmission of genetic information treated comparatively in man, animal, plant and microbe. Prerequisite: BISC 101 and 102.

**BISC 204-3 Introduction to Ecology**

An introduction to biotic-environmental relationships and dynamics; ecological concepts; population dynamics, variation, adaptation and evolution. Prerequisite: BISC 101 and 102. Credit will not be granted for both BISC 204 and GEOG 215.

**BISC 272-3 Special Topics in Biology**

Selected topics in areas not currently offered within the undergraduate course offerings in the Department of Biological Sciences. Prerequisite: to be announced in the Undergraduate Schedule of Classes and Examinations. Entry into this course normally requires completion of the lower division core for biological sciences, or permission of the department.

**BISC 300-3 Evolution**

The phenomenon of organic evolution, and the major forces leading to changes in allele frequencies over time, i.e. natural selection and genetic drift. Topics include adaptation, speciation, the origin of life, and the major evolutionary trends over geological time. Prerequisite: BISC 202. Recommended: BISC 204. Students with credit for BISC 400 may not take BISC 300 for further credit.

**BISC 302-3 Genetic Analysis**

Discussion and manipulations of some of the organisms and techniques applicable to genetic analysis. Prerequisite: BISC 202.

**BISC 302W-3 Genetic Analysis**

Discussion and manipulations of some of the organisms and techniques applicable to genetic analysis. Prerequisite: BISC 202. Writing.

**BISC 303-4 Microbiology**

The biology of micro-organisms and their significance in the understanding of cellular processes. Prerequisite: BISC 102 and MBB 231.

**BISC 304-3 Animal Ecology**

A study of the interrelationships of animals and their physical and biotic environment. Prerequisite: BISC 101, 102 and 204.

**BISC 304W-3 Animal Ecology**

A study of the interrelationships of animals and their physical and biotic environment. Prerequisite: BISC 101, 102, and 204. Writing.

**BISC 305-3 Animal Physiology**

A comparative study of basic physiological mechanisms in invertebrates and vertebrates. Prerequisite: MBB 231 and PHYS 102 (or PHYS 121 or 126 or 141) with a grade of C- or better.

**BISC 306-4 Invertebrate Biology**

An introduction to selected invertebrate phyla with an emphasis on functional morphology, diversity and ecology. Prerequisite: BISC 101, 102 and 204.

**BISC 307-3 Animal Physiology Laboratory**

A laboratory course using contemporary techniques of animal physiological research. Prerequisite: BISC 305 and 329.

**BISC 307W-3 Animal Physiology Laboratory**

A laboratory course using contemporary techniques of animal physiological research. Prerequisite: BISC 305 and 329. Writing.

**BISC 309-3 Conservation Biology**

An examination of the primary threats to biodiversity, how biological processes contribute to the persistence of populations and structure of communities, and species and landscape approaches to conservation in the real world. Prerequisite: BISC 204. Students who have taken BISC 474 in spring 2006 or BISC 475 in spring 2008 as special topics courses titled 'Conservation Ecology' cannot take this course for further credit.

**BISC 310-3 The Natural History of British Columbia**

Field course on the ecology, distribution, and characteristics of organisms representative of various biotic regions of the province (both terrestrial and marine). Sampling techniques are emphasized. The course will normally be taught as a full-time, intensive, three week course with field trips of one to several days duration. Prerequisite: BISC 204, and one of the following: BISC 306, 316, 317, 326, 337.

**BISC 313-3 Environmental Toxicology**

This course introduces students to basic principles of toxicology and several classes of widely encountered environmental pollutants. Emphasis is on toxicology as an interdisciplinary science. This course is a prerequisite for all advanced toxicology courses. Prerequisite: MBB 231.

**BISC 316-4 Vertebrate Biology**

A review of the evolution and the taxonomy of the vertebrate classes. A comparative study of their organ systems and functions with particular reference to reproduction. A comparison of the functional morphology of some species by laboratory dissections. Prerequisite: BISC 101 and 102.

**BISC 317-3 Insect Biology**

Life histories, bionomics, comparative morphology, and classification of insects and related organisms. A collection may be required, depending on instructor. Prerequisite: BISC 101 and 102.

**BISC 326-3 Biology of Algae and Fungi**

A survey of form, function and phenetics. Prerequisite: BISC 101 and 102.

**BISC 329-4 Introduction to Experimental Techniques**

This course is designed to introduce students to basic measurement methods and instrumentation as used in modern biology. Prerequisite: CHEM 121 and 122, MBB 231, PHYS 102 (or PHYS 121 or 126 or 141), STAT 201.

**BISC 333-3 Developmental Biology**

Classical and modern experimental approaches will be described for understanding development of embryos of several species having common and distinctive features. These approaches are at the organismal, cellular, molecular and genetic levels. Prerequisite: BISC 202, MBB 222, MBB 231.

**BISC 337-4 Plant Biology**

An introductory course covering many aspects of plant biology including the origin and evolution of plants, basic anatomy, plant growth and development and the utilization and impact of plants in human society. Prerequisite: BISC 101 and 102.

**BISC 341-3 Practicum I**

First term of work experience in the Biological Sciences Co-operative Education Program. Units for this course do not count towards the units required for an SFU degree. Prerequisite: acceptance in the biological sciences co-operative education program.

**BISC 342-3 Practicum II**

Second term of work experience in the Biological Sciences Co-operative Education Program. Units for this course do not count towards the units required for an SFU degree. Prerequisite: BISC 341 and re-admission to the science co-operative education program.

**BISC 357-3 Gene Cloning**

Introduction to various techniques in gene cloning and the applications of gene cloning. Laboratory exercises follow a sequence of events commonly practiced in many molecular genetics laboratories and include novel technologies such as cloning by site-directed recombination. Lecture content spans basic cloning in plasmids to novel large-scale genomics technologies. Prerequisite: BISC 202, MBB 222, 231. Recommended: MBB 331. Credit will not be granted for both BISC 357 and MBB 308. Cannot be taken for credit if already taken as a Special Topics course.

**BISC 366-3 Plant Physiology**

The plant's physical environment and the physiological basis (mechanisms and principles) of the interaction between plants and their environment in relation to their survival and ecological distribution. Prerequisite: MBB 231.

**BISC 367-3 Plant Physiology Laboratory**

A laboratory course using contemporary techniques of plant physiological research. Prerequisite: BISC 329 and 366.

**BISC 367W-3 Plant Physiology Laboratory**

A laboratory course using contemporary techniques of plant physiological research. Prerequisite: BISC 329 and 366. Writing.

**BISC 372-3 Special Topics in Biology**

Selected topics in areas not currently offered within the undergraduate course offerings in the Department of Biological Sciences. Prerequisite: to be announced in the Undergraduate Schedule of Classes and Examinations.

**BISC 403-3 Current Topics in Cell Biology**

The lectures will explore two or three major themes in current cell biology, such as cell motility, the cell cycle, and cellular signalling. A critical component of the course is to develop an understanding of the experimental basis of our knowledge about cells. Prerequisite: MBB 222, 231 with C- or better, and completion of 75 units, or completion of BISC 305 or 366 with a C- or better.

**BISC 404-3 Plant Ecology**

The study of the distribution and abundance of plants, including how individuals, populations, and communities are affected by abiotic (climate, soil) and biotic (competition, herbivory) factors. A major focus will be life history evolution (pollination, defence, dispersal). Experimental and observational laboratory exercises are primarily conducted outdoors. Prerequisite: BISC 101, 102, and 204.

**BISC 404W-3 Plant Ecology**

The study of the distribution and abundance of plants, including how individuals, populations, and communities are affected by abiotic (climate, soil) and biotic (competition, herbivory) factors. A major focus will be life history evolution (pollination, defence, dispersal). Experimental and observational laboratory exercises are primarily conducted outdoors. Prerequisite: BISC 101, 102, and 204. Writing.

**BISC 405-3 Neurobiology**

Physiology of neuroscience, focusing on cellular and molecular mechanisms. Topics include: cellular and

subcellular organization of the nervous system, electrical properties of neurons, ion channels, synaptic transmission, sensory systems, learning and memory, neurodegenerative diseases. Prerequisite: BISC 305. Students who have completed BISC 472 under the title 'Neurobiology' may not complete BISC 405 for further credit.

**BISC 406-3 Marine Biology and Oceanography**

An introduction to the marine environment, marine organisms and the ecological and oceanographic processes affecting them. Prerequisite: BISC 306 or 316.

**BISC 407-3 Population Dynamics**

An evaluation of factors influencing the natural fluctuation and regulation of plant and animal population numbers. Prerequisite: BISC 304 or 404.

**BISC 410-3 Behavioral Ecology**

An introduction to the evolution of behavior and its adaptiveness in a natural context. Corequisite: BISC 304 or permission of the department.

**BISC 411-3 Behavioral Ecology Laboratory**

Illustration of the principles of behavioral ecology, and the experimental approach to its study, by means of a series of laboratory and field exercises and an individual project. Prerequisite: BISC 304 and 410. Corequisite: BISC 410 could be taken concurrently.

**BISC 414-3 Limnology**

An integrated examination of biological, chemical and physical processes in lakes and running water ecosystems. Interactions among biological, chemical and physical controls on the structure, function and dynamics of aquatic ecosystems are emphasized. Environmental problems resulting from human disturbances to aquatic ecosystems are examined. Prerequisite: 75 units in a science program, including BISC 204 or GEOG 215, or permission of the instructor.

**BISC 416-4 Fish Biology**

An introduction to the biology of fishes with an emphasis on classification, evolution, anatomy, physiology, and ecology. Prerequisite: BISC 316 or permission of the department.

**BISC 418-3 Parasitology**

Ecology and phylogeny of animal parasites (from protozoa to helminthes), including those of humans, domestic animals and wildlife. Parasite success, host-parasite interactions, general epidemiological principles of parasitic infections, and reproductive strategies used by parasites to increase the likelihood of transmission as well as host responses and medical options for past and current parasite problems. Prerequisite: BISC 204. Recommended: BISC 300, 306.

**BISC 419-3 Wildlife Biology**

Theoretical and applied aspects of ecology and behavior in relation to wildlife populations and their habitats, with emphasis on important mammals and birds in British Columbia. Attendance on local field trips is required. Prerequisite: BISC 304. Recommended: BISC 316.

**BISC 422-3 Population Genetics**

Theoretical and experimental aspects of inheritance at the population level. Topics include Hardy-Weinberg, one- and two-locus selection theory, introduction to quantitative genetics, and Fisher's fundamental theorem of natural selection. Prerequisite: BISC 202 and STAT 201.

**BISC 429-4 Separation Methods in Biology**

A systematic introduction to separation principles and strategies for the purification of biomolecules, with laboratory experiments using contemporary techniques in complex biological systems. Detailed instruction in composing and writing scientific reports. Prerequisite: MBB 222, 231, 75 units.

**BISC 429W-4 Separation Methods in Biology**

A systematic introduction to separation principles and strategies for the purification of biomolecules, with laboratory experiments using contemporary techniques in complex biological systems. Detailed instruction in composing and writing scientific reports. Prerequisite: MBB 222, 231, 75 units. Writing.

**BISC 430-3 Microbe-Plant Interactions**

Interactions between major groups of microbes (including fungi, bacteria, viruses, phytoplasmas and viroids) with higher plants, including the chemical signals which trigger the onset of recognition events that result in a parasitic or mutualistic relationship, and the mechanisms of plant defence. Prerequisite: MBB 231 and at least one of BISC 303, 326, 337. Students who have completed BISC 475 under the title 'Microbe-Plant Interactions' may not complete BISC 430 for further credit.

**BISC 432-3 Chemical Pesticides and the Environment**

The physical, chemical and biological properties of chemical pesticides; risks and benefits associated with their use in pest management. Prerequisite: BISC 305 or 366. Recommended: for those who wish entry to the Master of Pest Management program.

**BISC 434-3 Paleoecology and Palynology**

The principles of paleoenvironmental reconstruction, emphasizing the study of pollen grains, spores, and other microfossils in solving problems of paleobiology and earth history. Prerequisite: minimum 60 units including BISC 204, or GEOG 215. Some background in botany, biogeography, or earth sciences is desirable.

**BISC 435-3 Introduction to Pest Management**

Survey of the natures, causes and consequences of pest problems and of the natural and applied factors and processes that determine their occurrence and intensity. Prerequisite: BISC 317, or 75 units.

**BISC 439-4 Industrial Microbiology**

This course introduces students to the use of microorganisms in biotechnology, e.g. in the environmental, pharmaceutical and chemical industries. The lectures will cover the unique physiology/biochemistry of industrial microorganisms and their use in processes such as fermentation, bioremediation, chemical synthesis and protein production. The laboratory component is designed as a series of exercises that form a complete research project. Prerequisite: BISC 303 or equivalent.

**BISC 440-3 Biodiversity**

The production and organization of biodiversity (investigations of species, and an in-depth look at taxonomy, systematics and phylogenetics). Evolutionary and ecological theories behind the patterns of biodiversity (the current and future geographic distribution of species, and how biodiversity is related to ecosystem function). The values society gives biodiversity (how our values are reflected in law and regulation). Prerequisite: BISC 300, STAT 201 or equivalent, both with C or better, plus 75 units.

**BISC 440W-3 Biodiversity**

The production and organization of biodiversity (investigations of species, and an in-depth look at taxonomy, systematics and phylogenetics). Evolutionary and ecological theories behind the patterns of biodiversity (the current and future geographic distribution of species, and how biodiversity is related to ecosystem function). The values society gives biodiversity (how our values are reflected in law and regulation). Prerequisite: BISC 300, STAT 201 or equivalent, both with C or better, plus 75 units. Writing.

**BISC 441-3 Evolution of Health and Disease**

Application of the principles and theories of evolution and ecology to the study of health and disease, with a

particular but not exclusive emphasis on humans.

Topics to be covered include the evolutionary ecology of infectious disease, the immune system, cancer, senescence, fetal programming, and the genetic/environmental bases of disease. The course will involve a combination of lectures by the primary faculty member teaching the course, discussions, student research projects (papers, written and revised, and presentations to the class), and specialist guest lectures. Prerequisite: BISC 202 or 204. Recommended: BISC 300.

**BISC 443-3 Practicum III**

Third term of work experience in the Biological Sciences Co-operative Education Program. Units for this course do not count towards the units required for an SFU degree. Prerequisite: BISC 342 and re-admission to the science co-operative education program.

**BISC 444-3 Practicum IV**

Fourth term of work experience in the Biological Sciences Co-operative Education Program. Units for this course do not count towards the units required for an SFU degree. Prerequisite: BISC 443 and re-admission to the science co-operative education program.

**BISC 445-3 Environmental Physiology of Animals**

A discussion of the physiological mechanisms and adaptations which permit animals to live in diverse environments. The course will adopt a comparative approach to physiology. Prerequisite: BISC 305.

**BISC 446-3 Practicum V**

Fifth term of work experience in the Biological Sciences Co-operative Education Program. Units for this course do not count towards the units required for an SFU degree. Prerequisite: BISC 444-0 and re-admission to the science co-operative education program.

**BISC 449-4 Histological Techniques in Biology**

Principles of microscopy and histological techniques for sample preparation: fixation, dehydration, embedding, and sectioning. Use of lipid and nucleic acid stains and antibodies for labeling. Prerequisite: BISC 329.

**BISC 455-3 Endocrinology**

A study of endocrine organs and their role in integrating physiological functions in animals. Prerequisite: BISC 305 and one of BISC 306 or 316.

**BISC 457-3 Plant Molecular Biology and Biotechnology**

An introduction to plant molecular biology and the techniques, applications and issues of plant genetic engineering. Prerequisite: MBB 222, 231.

**BISC 471-3 Special Topics in Biology**

Selected topics not currently offered within the undergraduate course offerings in the department of Biological Sciences. Prerequisite: to be announced.

**BISC 472-3 Selected Topics in Biology**

Selected topics in areas not currently offered within the undergraduate course offerings in the Department of Biological Sciences. Prerequisite: to be announced in the Undergraduate Schedule of Classes and Examinations.

**BISC 473-3 Selected Topics in Biology**

Selected topics in areas not currently offered within the undergraduate course offerings in the Department of Biological Sciences. Prerequisite: to be announced in the Undergraduate Schedule of Classes and Examinations.

**BISC 474-3 Special Topics in Biology**

Selected topics in areas not currently offered within the undergraduate course offerings in the Department of Biological Sciences. Prerequisite: to be announced in the Course Timetable and Exam Schedule.

**BISC 475-3 Special Topics in Biology**

Selected topics not currently offered within the undergraduate course offerings in the Department of Biological Sciences. Prerequisite: to be announced in the Course Timetable and Exam Schedule.

**BISC 490-5 Research Design**

Prerequisite: completion of all lower division biological sciences courses, plus upper division BISC courses appropriate to the subject of the intended research as determined by the departmental undergraduate curriculum committee; completion of all physics, chemistry and mathematics requirements for the major or honors program; at the time of application, students will normally have a CGPA of 3.00 (B standing). BISC 490 may be taken in the term prior to BISC 491/492 by students intending to complete the three course ISS.

**BISC 491-5 Research Technique**

Prerequisite: completion of all lower division biological sciences courses, plus upper division BISC courses appropriate to the subject of the intended research as determined by the departmental undergraduate curriculum committee; completion of all physics, chemistry and mathematics requirements for the major or honors program; at the time of application, students will normally have a CGPA of 3.00 (B standing). Corequisite: BISC 490 and 492.

**BISC 492-5 Research Reporting**

Prerequisite: completion of all lower division biological sciences courses, plus upper division BISC courses appropriate to the subject of the intended research as determined by the departmental undergraduate curriculum committee; completion of all physics, chemistry and mathematics requirements for the major or honors program; at the time of application, students will normally have a CGPA of 3.00 (B standing). Corequisite: BISC 490 and 491.

**BISC 492W-5 Research Reporting**

Prerequisite: completion of all lower division biological sciences courses, plus upper division BISC courses appropriate to the subject of the intended research as determined by the departmental undergraduate curriculum committee; completion of all physics, chemistry and mathematics requirements for the major or honors program; at the time of application, students will normally have a CGPA of 3.00 (B standing). Corequisite: BISC 490 and 491. Writing.

**BISC 497W-3 Undergraduate Research: Writing Intensive**

A student may enrol in this course only with prior written agreement of a faculty member to act as research supervisor, who will also provide instruction and feedback on the writing and presentation of results from the research. A maximum of six credit hours in research courses can be applied towards the degree. Prerequisite: 90 units. Writing.

**BISC 498-3 Undergraduate Research I**

Prerequisite: 90 units. A student will be permitted to enrol in this course only if he/she obtains the prior written agreement of a faculty member to act as research advisor. A different advisor is required than for BISC 499, but a student may take BISC 497W with the same advisor either following or concurrently with BISC 498. A maximum of six units in research courses can be applied towards the degree.

**BISC 499-3 Undergraduate Research II**

Prerequisite: 90 units. A student will be permitted to enrol in this course only if she/he obtains the prior written agreement of a faculty member to act as research advisor. A different advisor is required than for BISC 498, but a student may take BISC 497W with the same advisor either following or concurrently with BISC 499. A maximum of six units in research courses can be applied towards the degree.

**BISC 601-2 Agriculture, Horticulture and Urban Pest Management**

A broad range of agricultural pests and their management, with emphasis on insects, crop diseases, and weeds in greenhouses, orchards and field crops. Pest problems in urban environments, including stored products in and near buildings.

**BISC 602-2 Forest Pest Management**

Management of insect, microbial, vertebrate and plant pests of forests and forest products, including seed orchards, nurseries, dryland sorting areas. Emphasis is placed on diagnosis, decision-making, interactions and techniques for forest pest management.

**BISC 603-5 Farm and Speciality Crop Pest Management**

Agricultural pests and their management, with emphasis on insects and crop diseases, and including garden and greenhouse pests.

**BISC 604-3 Orchard Crop Pest Management**

Insects, diseases, and other pests of fruit trees, including grapevines and small fruits, and their management.

**BISC 605-3 Management of Animal Disease Vectors**

Management of vectors, especially arthropods, of human and animal diseases, especially microbial; selected topics in epidemiology.

**BISC 650-3 Environmental Risk Assessment**

This course emphasizes recent development in quantitative human health risk assessment and ecological effects based risk assessment of environmental chemicals. Prerequisite: BISC 313.

**BISC 651-3 Toxicity Tests I: Ecological Effects Based Tests**

This course provides the basic concepts and practical experience for the application of ecologically-based toxicity tests. Prerequisite: BISC 313.

**BISC 652-3 ET Tests II: Mammalian Toxicity Tests**

The main focus of this course is on laboratory testing procedures currently employed in the toxicological evaluation of chemicals. Prerequisite: BISC 313 or permission of the department.

**BISC 654-3 Food and Drug Toxicology**

Investigates those toxic compounds in the environment which are added to, contaminate, or supplement one's diet. Prerequisite: BISC 313 or equivalent.

**BISC 655-3 Environmental Toxicology Seminar**

A structured series of seminars on the recent developments of environmental toxicology.

**BISC 656-6 Master of Environmental Toxicology Project**

One term experience in a university or commercial laboratory according to student's interests. Prerequisite: acceptance into the environmental toxicology program.

**BISC 657-0 Co-Op Practicum I**

First work experience for MET students. Prerequisite: permission of the department.

**BISC 658-0 Co-op Practicum II**

Second work experience for MET students. Prerequisite: Permission of the department.

**BISC 800-1 Basic Skills for a Career in Science**

Introduction to methods of writing research articles and grant proposals, preparing talks for scientific and non-scientific audiences, and writing for the media. The student-supervisor relationship and conflict resolution are also discussed.

**BISC 806-3 Evolutionary Theory**

A consideration of recent advances and current controversies in our understanding of the development, diversification and adaptation of life through natural selection.

**BISC 807-3 Ecological and Evolutionary Physiology**

This course considers what physiology has to offer behavioral and evolutionary ecology (and vice versa), with a focus on whole organism or 'integrative physiology.'

**BISC 812-3 Marine Research Techniques: Scientific Diving**

An introduction to the use of diving in marine/freshwater research, related underwater methodology, diving competency and current issues in marine biological research and scientific diving.

**BISC 814-3 Aquatic Ecology**

Current problems in the ecology of marine and freshwater environments. Topics will be selected from recent developments in physiological ecology, energetics, population ecology and community studies.

**BISC 815-3 Contemporary Problems in Plant Physiology**

Directed studies in modern laboratory approaches to specific areas of research.

**BISC 816-3 Biology and Management of Insects**

Bionomics, ecology, economic impact, and management of the major groups of insects, based on intensive reviews of information on representative species. Prerequisite: BISC 317 or permission of the department.

**BISC 817-3 Evolution of Social Behavior**

Study of the proximate and ultimate causes and consequences of alternative social systems in non-human animals.

**BISC 821-1 Cell and Molecular Biology Colloquium**

This seminar course provides a rigorous introduction to recent research in cell biology. Papers will be selected along a particular theme, but there is always a strong emphasis on the experimental basis of our knowledge about cellular mechanisms. Prerequisite: permission of the instructor. A student may not take more than 3 units of Cell and Molecular Biology Colloquium courses, including MBB 821, 822, 823.

**BISC 822-1 Cell and Molecular Biology Colloquium**

This seminar course provides a rigorous introduction to recent research in cell biology. Papers will be selected along a particular theme, but there is always a strong emphasis on the experimental basis of our knowledge about cellular mechanisms. Prerequisite: permission of the instructor. A student may not take more than 3 units of Cell and Molecular Biology Colloquium courses, including MBB 821, 822, 823.

**BISC 823-1 Cell and Molecular Biology Colloquium**

This seminar course provides a rigorous introduction to recent research in cell biology. Papers will be selected along a particular theme, but there is always a strong emphasis on the experimental basis of our knowledge about cellular mechanisms. Prerequisite: permission of the instructor. A student may not take more than 3 units of Cell and Molecular Biology Colloquium courses, including MBB 821, 822, 823.

**BISC 824-3 Survival and Reproductive Strategies**

An examination of strategies for resource acquisition and allocation, and the behavioral, ecological and life history means whereby organisms maximize lifetime reproductive success.

**BISC 827-1 Seminar in Evolutionary and Behavioral Ecology**

An introduction to the important issues, methods and philosophy of behavioral ecology, and discussion of current topics. Prerequisite: BISC 304 and 410 or permission of the department.

**BISC 828-3 Models in Behavioral Ecology**

An intensive survey course of current modeling techniques used for analysis of problems in behavioral ecology.

**BISC 829-3 Conservation Ecology**

This course will illustrate the value of applying ecological theory, particularly concerning life history and demography, to issues of management and conservation. Examination of life history characteristics and variability of individuals will demonstrate how knowledge of demography and population parameters are essential for effective conservation. Emphasis will be on vertebrate species.

**BISC 838-3 Population Biology**

Consideration of the ecological and genetic processes acting at the population level.

**BISC 839-3 Industrial Microbiology**

This course introduces students to the use of micro-organisms in biotechnology, e.g. in the environmental, pharmaceutical and chemical industries. The lectures will cover the unique physiology and biochemistry of industrial micro-organisms as well as discussing their use in various processes including industrial fermentation, bioremediation, chemical synthesis and protein production (e.g. vaccines) by recombinant organisms. Prerequisite: a second or third year undergraduate microbiology course.

**BISC 841-3 Plant Disease Development and Control**

An examination of the major factors that lead to development of soil-associated and foliar plant diseases in cultivated crops, in relation to the nature, underlying principles, application and limitations of various types of control practices.

**BISC 842-3 Molecular Physiology of Insects**

An examination of hormonal and nutritional factors that influence growth and development, as well as energy metabolism in insects, with emphasis on the molecular mechanisms involved in their regulation.

**BISC 843-3 Applied Behavioral Ecology**

Concepts and methods from behavioral ecology and population dynamics are used to solve problems of an applied nature (e.g. pest management, harvesting policies, management of human diseases). Model building and analysis feature prominently.

**BISC 844-3 Biological Controls**

Principles, theory, and practice of the use of living organisms in the natural regulation and the control of organisms. Emphasis will be on parasitic insects, and include host specificity, genetics, genetic controls, and the evolution of host-parasite associations.

**BISC 846-3 Insecticide Chemistry and Toxicology**

The chemistry of insecticides, with emphasis on their toxicology, metabolism and molecular mechanism of action.

**BISC 847-3 Pest Management in Practice**

Status and special problems of research development and implementation of pest management programs in different kinds of ecosystems; consideration of factors such as management systems, economics, communication, legal and social constraints, and ethics in the practice of pest management.

**BISC 849-6 Master of Pest Management Thesis**

An independent research thesis based on laboratory or field-based research and focused on some aspect of pest management. The research may be supervised by any faculty member in the Department of Biological Sciences.

**BISC 851-3 Vertebrate Pests**

Evaluation of the biology of vertebrates that are in conflict with human activities; discussion of control strategies and economic and social impacts.

**BISC 852-3 Biology of Animal Disease Vectors**  
Physiological, molecular, and behavioral interactions between parasites of human importance and their insect vectors. Emphasis is placed on current literature relating to modern approaches in reducing parasite transmission.

**BISC 854-3 Ecotoxicology**

The proposed course will detail the physiochemical factors that influence contaminant behavior in aquatic and terrestrial ecosystems. Prerequisite: BISC 101, 312, CHEM 102, and 103. Recommended: BISC 414.

**BISC 855-3 Biochemical Toxicology**

This course examines the biodynamics and actions of toxicants on several key biological systems within living organisms at the biochemical and molecular levels. Prerequisite: BISC 313.

**BISC 859-3 Special Topics I**

Selected topics in biological science. The content of this course varies from term to term.

**BISC 869-3 Special Topics II**

**BISC 879-3 Special Topics III**

**BISC 880-3 Special Topics in Behavioral Ecology**

A consideration of advanced special topics in the field of behavioral ecology.

**BISC 881-3 Special Topics in Cell and Molecular Biology**

A student participation seminar course focusing on recent literature on selected topics in cellular, developmental, and molecular biology. Prerequisite: permission of the instructor

**BISC 883-3 Special Topics in Environmental Toxicology**

Special topics course with emphasis on recent developments in environmental toxicology.

**BISC 884-3 Special Topics in Pest Ecology and Management**

A course that provides graduate students with an in-depth analysis of a topic in pest ecology and management. The course content will change from year to year to reflect student interests and topical research, and can be taught by any faculty member of the Department of Biological Sciences.

**BISC 885-3 Special Topics in Animal Physiology**

Special topics in comparative vertebrate and invertebrate functional mechanisms and adaptations. Prerequisite: undergraduate course in animal physiology.

**BISC 886-3 Special Topics in Marine and Aquatic Biology**

Special topics course emphasizing recent developments in the area of aquatic and marine biology.

**BISC 887-3 Special Topics in Plant Biology**  
Advanced treatment of selected topics or specialized areas in plant biology. The special topics to be discussed will vary from term to term.

**BISC 888-1 Directed Readings in Biology**  
Programs of directed readings and critical discussions offered by staff members to individual students. A formal description of the study program is required (forms available from the graduate secretary). These forms must be approved by the departmental graduate studies committee at the beginning of the term, prior to enrolment.

**BISC 889-2 Directed Readings in Biology**  
Intended to cover the same ground as a normal graduate course, it may be given to one or two students when a lecture/seminar is inappropriate.

**BISC 890-3 Directed Readings in Biology**  
Programs of directed readings and critical discussions offered by staff members to individual students. A formal description of the study program is

required (forms available from the graduate secretary). These forms must be approved by the departmental graduate studies committee at the beginning of the term, prior to enrolment.

**BISC 898-6 MSc Thesis**  
**BISC 899-6 PhD Thesis**

**Business Administration BUS**  
**Faculty of Business**  
**Administration**

**BUS 130-3 Business in the Networked Economy I**

The management and operation of business, including the principles, concepts, ideas and tools used by managers. Management in the contemporary world of high technology is emphasized, featuring examples and cases involving high-tech firms. In addition, the course exposes students to international and local business issues, and to large companies as well as to smaller, entrepreneurial firms. Students with credit for TECH 128, 129 and 130 may not take this course for further credit. Breadth-Social Sciences.

**BUS 207-3 Managerial Economics**

Emphasis is upon the relevance of economic models to business decision-making and, in particular, upon the rational analysis of choice alternatives within the firm. Course will include consideration of optimizing techniques and analysis of risk, demand, production and profit in addition to examination of long-term investment decisions and business forecasting. Prerequisite: ECON 103, 105; MATH 157; 15 units. Students with credit for ECON 301 or BUS 307 may not take BUS 207 for further credit. Quantitative.

**BUS 225-3 Co-op Practicum I**

This is the first term of work experience for students in the Co-operative Education Program. It provides an opportunity to integrate theory and practice. This course is open only to co-op students. The co-op program co-ordinator must be contacted at the beginning of the term prior to enrolment for this course. Units for this course do not count towards the units required for an SFU degree.

**BUS 237-3 Information Systems in Business**

Introduces students to the knowledge and skills necessary to make full use of business information systems. Demonstrates how information systems are used by organizations to improve productivity and create competitive advantage. Provides hands on training in productivity tools including Excel, Visio, Access and Web design tools. Prerequisite: 12 units. Students may not receive credit for both BUS 237 and 337.

**BUS 242-3 Introduction to Financial Management**

This course is designed to introduce students to the concepts and techniques of corporate financial analysis. The goal is to provide them with the skills and understanding necessary to apply financial tools in a work-related context. Three primary financial functions are considered: management of working capital, the investment decision, and funds acquisition. The course also covers issues from financial accounting related to the development of financial statements and financial statement analysis. Prerequisite: MATH 110. Special Instructions: this course is only open for credit to students in the integrated studies program within the bachelor of general studies degree.

**BUS 251-3 Financial Accounting I**

An introduction to financial accounting, including accounting terminology, understanding financial statements, analysis of a business entity using financial statements. Includes also time value of money and a critical review of the conventional

accounting system. Prerequisite: 12 units. Quantitative.

**BUS 254-3 Managerial Accounting I**

Theory and methods of cost compilation for managerial planning, control and decision making; the use of budgets and analysis in planning and controlling operations, establishing supervisory and departmental responsibility, and various techniques of measuring results. Prerequisite: BUS 251; 15 units. Students with credit for BUS 324 or 328 may not take BUS 254 for further credit. Quantitative.

**BUS 272-3 Behavior in Organizations**

Theories, concepts and issues in the field of organizational behavior with an emphasis on individual and team processes. Core topics include employee motivation and performance, stress management, communication, work perceptions and attitudes, decision-making, team dynamics, employee involvement and conflict management. Prerequisite: 12 units.

**BUS 303-3 Business, Society and Ethics**

This course examines and reviews contemporary thinking on the changing role of business and business persons in the operations of society, particularly Canadian society. The course explores the changing legal, ethical and regulatory environments of business focusing on the critical alignments -- values, policies, technology and legal approaches -- between the modern organization and its broader public. Prerequisite: 60 units.

**BUS 312-4 Introduction to Finance**

Role and function of financial managers, financial analysis, compound interest valuation and capital budgeting, management of current assets, introduction to financial instruments and institutions. Prerequisite: BUS 254 (or 324); 60 units. Recommended: BUS 207 or ECON 301. Quantitative.

**BUS 314-3 New Venture Finance**

Start-up and early-stage ventures have particular financial challenges associated with the uncertain and unproven nature of the project. This course analyzes how entrepreneurs and their financial backers can spot, create and manage value. Topics covered include opportunity recognition, cash flow forecasting, valuation methodologies, financial contracts, and careful negotiations. Various sources are considered for start-up capital (private debt, angel financiers, venture capitalists, development banks), and different strategies are considered for harvesting or exiting (initial public offerings, merger, acquisition, leveraged buy-out, shut down) a venture. Prerequisite: BUS 312, 60 units.

**BUS 315-4 Investments**

Investments from an individual and institutional point of view. Topics include: bond valuation and the term structure of interest rates, stock valuation, portfolio theory, asset pricing models, efficient markets and portfolio performance evaluation. Prerequisite: BUS 312, 336 and 207 or ECON 301; 60 units. Quantitative.

**BUS 316-3 Derivative Securities**

The role derivative securities, mainly options and futures contracts, in controlling risk and enhancing profit opportunities. Valuation of derivative securities. The organization of options and futures markets and the mechanics of trading. Prerequisite: BUS 312, 336; 60 units. Students with credit for BUS 416 may not take BUS 316 for further credit. Quantitative.

**BUS 319-3 Integrative Financial and Managerial Accounting**

For students planning further course work in accounting. Its integrative approach includes financial and managerial accounting topics, alternative accounting models, accounting systems and accounting data management, international accounting and accounting ethics. Prerequisite: BUS

254 (or 324 or 328), 237 and 60 units. Students with credit for BUS 252 may not take BUS 319 for further credit. Corequisite: BUS 254 can be taken concurrently with BUS 319.

### **BUS 320-3 Financial Accounting: Assets**

In-depth coverage of the accounting methods, problems and limitations associated with assets. Alternative valuation bases will be emphasized and illustrated together with the impact on income. Integration of theory and practice in relation to the treatment of assets. Prerequisite: BUS 254; 60 units. Quantitative.

### **BUS 321-3 Financial Accounting: Equities**

In-depth coverage of accounting, methods, problems, and limitations, associated with liabilities and owners' equity. An introduction to the unique aspects and issues of accounting for not-for-profit organizations will also be provided. Prerequisite: BUS 320-3; 60 units. Quantitative.

### **BUS 322-3 Intermediate Managerial Accounting**

In-depth examination of important managerial accounting topics introduced in BUS 254 (e.g., transfer pricing, variance analysis) and more advanced topics (e.g., decision making under uncertainty, the value of information), focusing on providing the tools and techniques needed for the generation, analysis and dissemination of management accounting information necessary for making strategic business decisions. The course will also introduce and develop the case approach in order to prepare students for BUS 424. Prerequisite: BUS 254, 60 units.

### **BUS 325-3 Co-op Practicum II**

This is the term semester of work experience for students in the Co-operative Education Program. It provides an opportunity to integrate theory and practice. This course is open only to co-op students. The co-op program co-ordinator must be contacted at the beginning of the term prior to enrolment for this course. Units for this course do not count towards the units required for an SFU degree.

### **BUS 326-3 Co-op Practicum III**

This is the third term of work experience for students in the Co-operative Education Program. It provides an opportunity to integrate theory and practice. This course is open only to co-op students. The co-op program co-ordinator must be contacted at the beginning of the term prior to enrolment for this course. Units for this course do not count towards the units required for an SFU degree.

### **BUS 327-3 Co-op Practicum IV**

This is the fourth term of work experience for students in the Co-operative Education Program. It provides an opportunity to integrate theory and practice. This course is open only to co-op students. The co-op program co-ordinator must be contacted at the beginning of the term prior to enrolment for this course. Units for this course do not count towards the units required for an SFU degree.

### **BUS 329-4 Income Tax for Business Decision-Making**

An examination of the underlying principles, concepts and methodology of income taxation in Canada, with emphasis upon the use of current reference sources. The course focus will be upon business taxation. Prerequisite: 60 units. Corequisite: BUS 320 or permission of Faculty.

### **BUS 336-4 Data and Decisions II**

This course is an extension of BUEC 232. It develops and applies the quantitative models that are most directly relevant to business decisions. Beginning with material on multiple regression and forecasting modeling, the course moves on to decision analysis, business simulation, quality control, and an

introduction to optimization. Prerequisite: MATH 157 and BUEC 232, 60 units. Quantitative.

### **BUS 338-3 Understanding Technological Innovation**

An introduction to the theory and practice of the management of technological innovation. The external environment for technological innovation is examined through investigation of national and regional systems of innovation. The internal firm capabilities for creating and sustaining innovative firms are explored in detail, from the creation of ideas through to the commercialization of new products and services. Proficiency is gained in identifying sources of innovative value, implementing processes to capture it, and creating strategies for commercialization. Prerequisite: 60 units.

### **BUS 341-3 Fundamentals of Marketing for Integrated Studies Program**

This course is intended to be a first course in marketing management. Its purpose is to present students with the fundamentals of the marketing management process and of the importance of marketing in general. You will also develop some insight into the complex area of marketing decision-making and what marketing managers need to know to be effective. By applying fundamental marketing concepts, students will be able to solve real life marketing problems. Particular emphasis will be placed on understanding consumer behavior and segmentation analysis, the management of promotion, product-related decision-making and market distribution. Uncontrollable environmental elements pertinent to marketing planning will also be discussed. Prerequisite: 60 units. This course is only open for credit to students in the Integrated Studies Program within the bachelor of general studies degree.

### **BUS 342-3 Foundations of Entrepreneurship**

Provides an overview of entrepreneurship, where opportunities come from, and where they may be found. Prerequisite: 60 units. Students with credit for BUS 395 Special Topics (Intro to Entrepreneurship) may not take this course for further credit.

### **BUS 343-3 Introduction to Marketing**

The environment of marketing; relation of social sciences to marketing; evaluation of marketing theory and research; assessment of demand, consumer behavior analysis; market institutions; method and mechanics of distribution in domestic, foreign and overseas markets; sales organization; advertising; new product development, publicity and promotion; marketing programs. Prerequisite: 60 units.

### **BUS 345-4 Marketing Research**

A course in the management of marketing research. The basics of the design, conduct, and analysis of marketing research studies. Prerequisite: BUS 343, 336; 60 units; students with credit for BUS 442 may not complete BUS 345 for further credit.

### **BUS 346-3 International Business**

Study of international environment and its impact on business behavior: cultural, social, economic and institutional factors; major functions of international business; export and import trade, foreign investment, production and marketing operations; theoretical principles, government policies, business practices. Prerequisite: 60 units.

### **BUS 347-3 Consumer Behavior**

A study of the manner in which decisions are made in the market place, by both the ultimate consumer and the industrial buyer. Course will include consideration of consumer decision processes, individual and group influences and special cases such as brand loyalty and consumerism. Prerequisite: BUS 343; 60 units.

### **BUS 360-4 Business Communication**

This course is designed to assist students to improve their written and oral communication skills in business

settings. The theory and practice of business communication will be presented. Topics include analysis of communication problems, message character, message monitoring, message media. Exercises in individual and group messages and presentations will be conducted. Prerequisite: 60 units.

### **BUS 360W-4 Business Communication**

This course is designed to assist students to improve their written and oral communication skills in business settings. The theory and practice of business communication will be presented. Topics include analysis of communication problems, message character, message monitoring, message media. Exercises in individual and group messages and presentations will be conducted. Prerequisite: 60 units. Writing.

### **BUS 361-3 Project Management**

Introduction to the hard and soft skills of project management. Management software and techniques such as work breakdown, estimation, budgeting and status reporting are used. Applies structured processes and develops team-based skills and knowledge. Assumes no prior computing or technical knowledge. Prerequisite: 60 units.

### **BUS 362-4 Business Process Analysis**

Prepares students to model, analyze and propose improvements to business processes. In the major project, students analyze a process within an organization and use current techniques and tools to propose changes and a supporting information system. Prerequisite: BUS 237; 60 units.

### **BUS 364-3 Information Systems in Organizations and Society**

This course is directed at the student as a consumer and a manager of systems within organizations, and as a member of society. We will discuss the use of information technology in the functional areas of business as a method of control as well as its implication in improving efficiency and effectiveness within organizations. The student will be encouraged to form his/her own opinions about this very pervasive technology. Prerequisite: BUS 237; 60 units.

### **BUS 374-3 Organization Theory**

This course will examine theories of organization which use the organization as a basic unit of analysis. It will show how the structure and internal processes of an organization are linked to and partially determined by forces in the external environment of the organization. Contextual factors such as the technology and corporate strategy of the organization will also be examined. Prerequisite: 60 units; BUS 272 (or 372).

### **BUS 380-3 Comparative Management**

This course examines the major similarities and differences in management systems and practices in a variety of countries, including western Europe, East Asia, Middle East, and Latin America. Topics include the following: comparative management frameworks, managing cultural differences, cross-cultural business negotiations, and international human resource management. Prerequisite: BUS 272; 60 units. Students with credit for BUS 430 may not take BUS 380 for further credit. Recommended: BUS 346.

### **BUS 381-3 Introduction to Human Resource Management**

Subjects include human resource planning, job analysis and design, recruitment, employment equity, selection and placement, performance appraisal, compensation and benefits, training and development, occupational health and safety, and industrial relations. For each subject an overview of current Canadian issues and practices is presented. Prerequisite: BUS 272 (or 372); 60 units.



**BUS 393-3 Commercial Law**

Common law, equity, and statute law; contracts, agency, and negotiable instruments; partnership and corporation law; international commercial law. Prerequisite: 60 units. BUEC 391 is not to be taken concurrently with BUS 393.

**BUS 394-3 Selected Topics in Business Administration**

The subject matter will vary from term to term depending upon the interest of faculty and students. Prerequisite: as stated by the faculty at the time of offering; 60 units.

**BUS 395-3 Selected Topics in Business Administration**

The subject matter will vary from term to term depending upon the interest of faculty and students. Prerequisite: as stated by the faculty at the time of offering; 60 units.

**BUS 403-3 Seminar in Business and Society**

Focuses on and integrates many of the ethics-related topics touched upon in core business courses. Emphasis may vary and may include discussions of market failures, codes of ethics, privacy/confidentiality issues, cross-cultural business norms, social and environmental issues, organizational cultures and best practices in corporate governance. Prerequisite: 90 units, BUS 360.

**BUS 410-3 Financial Institutions**

An examination of financial institutions and the markets in which they operate. Topics may include: institutional structure, financial contract forms, valuation and pricing relationships, financial intermediation, financial transacting, the regulatory environment, risk measurement and hedging strategies. Prerequisite: BUS 315, 316, 360; 60 units.

**BUS 413-4 Corporate Finance**

Corporate decisions in the context of financial markets. Topics include: real asset investments, financing alternatives, dividend policy, working capital management, and corporate securities valuation. Prerequisite: BUS 315, 316, 360; 60 units.

**BUS 417-4 Security Analysis**

This course covers the historical, theoretical and practical issues involved in the market valuation of securities. Three general areas are studied: valuation of fixed income securities; valuation of equity securities; and topics in portfolio management. Prerequisite: BUS 315, 316, 360; 60 units. Students who have taken BUS 492 under the topic Security Analysis may not take BUS 417 for further credit.

**BUS 418-3 International Financial Management**

An introduction to international financial markets and institutions and to the management of assets and liabilities in an international/multinational setting. Topics to be covered include: exchange rate determination and management of foreign exchange risk; interest rate swaps; international portfolio management; comparative markets; and country risk. Prerequisites: BUS 315, 316, 360; 60 units.

**BUS 419-3 Advanced Derivative Securities**

This is a second course in derivative securities. Topics may include: extensions of the Black-Scholes model, pricing of American options, interest rate derivatives, complex derivatives and real options. Prerequisite: BUS 315, 316, 360; 60 units. Students who have taken BUS 493 under the topic Advanced Derivative Securities may not take BUS 419 for further credit.

**BUS 420-3 Advanced Accounting**

In-depth coverage of advanced accounting topics, specifically issues relating to business combinations and foreign currency. Consideration is also given to the interpretation and analysis of financial statements. Prerequisites: BUS 321, 360; 60 units.

**BUS 421-3 Accounting Theory**

Consideration of methods by which accounting theory is developed and examination of specific models including historical costs, replacement costs, resale price and price level adjustment models. Prerequisites: BUS 321, 360, BUS 207 or ECON 301; 60 units.

**BUS 424-3 Advanced Managerial Accounting**

Process costing; joint and by-product costing; inventory planning and control; cost accounting and statistical methods, relationship to operations research. Prerequisites: BUS 322 or 319, 336, 360; 60 units.

**BUS 425-3 Co-Op Practicum V**

This is the fifth term of work experience for students in the accounting Co-operative Education Program. It provides an opportunity to integrate theory and practice. This course is open only to accounting co-op students. The co-op program co-ordinator must be contacted at the beginning of the term prior to enrolment for this course. Credits for this course do not count towards the units required for an SFU degree.

**BUS 426-3 Auditing and Assurance: Concepts and Methods**

A study of the conceptual foundations and the nature and purpose of the external audit function. The course will also discuss some of the more recent developments in auditing such as comprehensive auditing, computer auditing, and the use of statistical methodology in auditing. Prerequisite: BUS 321, 360 and 60 units.

**BUS 431-3 Business with East Asian Countries**

This course examines the opportunities and challenges of doing business with the Pacific Rim countries such as China, Japan and Korea. Topics include the following: the political and economic systems as they affect foreign investment; social and cultural systems as they affect management practices; the conduct of business negotiations for market entry; and marketing strategies. Prerequisite: BUS 346, 360, and one of BUS 380 or 432; 60 units.

**BUS 432-3 International Human Resource Management**

Significance of multinational complexity and diversity (cultural, economic, demographic, etc.) to the human resource function. Interplay among human resource functions (employee procurement, allocation, utilization), types of employees, and countries of operation. Prerequisite: BUS 360 and one of BUS 381 or 374; 60 units. Recommended: BUS 346.

**BUS 434-3 Foreign Market Entry**

Examines various topics related to a firm's entry into international markets and the means of sustaining a formidable presence vis-a-vis competitors in foreign markets. Begins with an overview of the historical evolution of the globalization process, the internationalization process of individual firms, challenges that internationalizing firms face in terms of differences in culture and political risk among various host markets entered, and models of multinational companies, and then builds on this background in providing an overview and in-depth coverage of important entry modes such as licensing/franchising, JVs/alliances, acquisitions/mergers with specific focus on managing these modes of entry in an international setting. Prerequisite: BUS 346 and 360; 60 units. Students who have taken BUS 492 (Topic: Foreign Market Entry) may not take this course for further credit.

**BUS 435-3 Management of International Firms**

Strategic requirements for the management of multinational corporations. Firm-specific and institutional challenges facing global managers in formulating and implementing profitable strategies.

Prerequisite: BUS 346, 360 and one of BUS 380 or 432; 60 units.

**BUS 437-3 Decision Analysis in Business**

A seminar in the use of Bayesian techniques in business decisions. Prerequisite: BUS 336, 360; 60 units.

**BUS 440-4 Simulation in Management Decision-making**

Development and use of simulation models as an aid in making complex management decisions. Hands on use of business related tools for computer simulation. Issues related to design and validation of simulation models, the assessment of input data, and the interpretation and use of simulation output. Prerequisite: BUS 336, 360; 60 units.

**BUS 443-3 Marketing for New Ventures**

Understand how to develop and launch new products that will be successful with customers. Students will learn to: identify product/service opportunities; generate and evaluate concepts; develop concepts into products; launch new products. Prerequisite: 60 units; BUS 360, 343.

**BUS 444-3 Business to Business Marketing**

This course deals with the marketing of products and services to industrial and other non-consumer sector buyers. The student will be expected to apply previously acquired marketing skills to purchasing situations which arise between organizations. Due to the nature of manufacturing activity in this province, industrial marketing will be approached from a resource industry based standpoint where discussions permit. Prerequisite: BUS 343, 360; 60 units; students with credit for BUS 344 may not complete BUS 444 for further credit.

**BUS 445-3 Analysis of Data for Management**

The analysis and interpretation of data, particularly multivariate data. This course is complementary to BUS 345 but may be taken independently. Applications in management science and information systems, organizational behavior and other areas as well as in marketing will be examined. Prerequisite: BUS 343, 336, 360; 60 units.

**BUS 446-4 Marketing Strategy**

Marketing strategy focuses on the analysis of market problems and opportunities and the development of appropriate strategies. Topics include: analytical techniques, strategic planning methods and managerial problems of planning. Case analysis and problem solving will be the major orientation of the course. Prerequisite: BUS 312, 347, 360; 60 units.

**BUS 447-3 Global Marketing Management**

The marketing of goods and services in an international context, with emphasis on Pacific Rim countries. Theoretical concepts, environmental influences. Researching and forecasting international markets. The management of international marketing. Prerequisite: BUS 343, 360; 60 units. Recommended: BUS 346.

**BUS 448-4 Integrated Marketing Communications**

An integrative approach to the study of promotion including advertising publicity, personal selling and sales promotion; evaluation of the role promotion has in marketing and the economy; formulation and analysis of promotional goals, planning, organizing and controlling; utilization of market research studies; forecasting, budgeting, media selection; promotion institutions. Prerequisite: BUS 347, 360; 60 units.

**BUS 449-3 Ethical Issues in Marketing**

A critical examination of topics such as consumerism, marketing ethics, and social responsibility, efficiency of marketing or ecological marketing. The particular emphasis may vary depending on the interests of the class and instructor. Prerequisite: BUS 343, 360; 60 units.

**BUS 450-3 Emerging Technologies for Business**

Develops abilities to monitor social, cultural, commercial, political and technical developments to forecast and assess emerging technologies. Forecasting methods including expert opinion, trend analysis and scenario construction will be discussed. Selected emerging technologies will be examined through invited speakers and videos. Prerequisite: 60 units, BUS 338, 360.

**BUS 451-8 Project in International Marketing**

Addresses a key international marketing issue facing a Norwegian or other European firm with interests in or expansion plans for North America. These firms will be identified by our partner institution, BI Norwegian School of Management, in consultation with prospective students. Prerequisite: 80 units; four 400-level marketing courses. This course is available only to students from the BI Norwegian School of Management who are on an exchange at SFU under the special program agreement.

**BUS 452-3 Strategic Management of Innovation**

Through readings, cases and lectures, students learn to develop and implement strategy within the context of high technology businesses and other organizations in which innovation and commercialization of intangible assets is of profound importance. Well suited for students interested in working as consultants or analysts. Prerequisite: 60 units, BUS 338, 360. Students with credit for BUS 492 may not complete this course for further credit.

**BUS 453-3 Sustainable Innovation**

Challenges associated with continuing innovation are examined and students work to generate innovative solutions by challenging existing economic models. Students learn about sustainable opportunity, recognition, and screening, and understand how great ideas to 'save the planet' can get off the ground. Prerequisite: 60 units, BUS 360. Students with credit for BUS 494 may not complete this course for further credit.

**BUS 454-3 Creativity in Business**

Designed to aid participants in opening to the creativity within themselves so that each person's life can be lived as a 'work of art.' True creativity in business results from the contagious energy of inspired and creative individuals. Prepares students for innovation and entrepreneurship culminating in the presentation of a brand book for a new venture (actual or imagined -- up to you!). Prerequisite: 60 units, BUS 360. Students with credit for BUS 493 may not complete this course for further credit.

**BUS 456-4 Honors Seminar I**

One of a cohort of three courses presented at the Segal Graduate School of Business for senior students enrolled in the undergraduate program in Business Administration. This course is part of a 12 unit seminar program fulfilling the requirements of the honors portion of the degree requirements. Each full-time one term program emphasizes current issues in business and society, industry interaction, and dialogue and discussion as conduits for student centred learning. Prerequisite: 105 units, 3.5 CGPA, or permission of the faculty. Corequisite: BUS 457, 458.

**BUS 457-4 Honors Seminar II**

One of a cohort of three courses presented at the Segal Graduate School of Business for senior students enrolled in the undergraduate program in Business Administration. This course is part of a 12 unit seminar program fulfilling the requirements of the honors portion of the degree requirements. Each full-time one term program emphasizes current issues in business and society, industry interaction, and dialogue and discussion as conduits for student centred learning. Prerequisite: 105 units, 3.5 CGPA,

or permission of the faculty. Corequisite: BUS 456, 458.

**BUS 458-4 Honors Seminar III**

One of a cohort of three courses presented at the Segal Graduate School of Business for senior students enrolled in the undergraduate program in Business Administration. This course is part of a 12 unit seminar program fulfilling the requirements of the honors portion of the degree requirements. Each full-time one term program emphasizes current issues in business and society, industry interaction, and dialogue and discussion as conduits for student centred learning. Prerequisite: 105 credit hours, 3.5 CGPA, or permission of the faculty. Corequisite: BUS 456, 457.

**BUS 459-3 Services Marketing**

Increases students' sensitivity to the marketing concepts previously studied as applied to service industries, and familiarizes students with the management problems of service marketing managers. Prerequisite: 60 units; BUS 343, 347 and 360. Students who have taken BUS 490-495 under the same topic may not take this course for further credit.

**BUS 462-3 Business Intelligence**

Utilizes technology to support analysis and decision making abilities by identifying, analyzing and effectively reporting important business information. Concepts of data warehousing, data mining and visualizing data are introduced. A variety of software applications are used to demonstrate tools and techniques that support analysis and decision making for managers. Prerequisite: BUS 336, 360; 60 units. Corequisite: BUS 336 can be taken concurrently.

**BUS 464-3 Data Management and IS Audit**

Focuses on the use of integrated database management systems in organizations and their application to IS audit and security. Students analyze data models and create business reports based on SQL. SQL queries are designed for audit and information security purposes. The CoBIT framework is used to understand foundations of IS audit. Prerequisite: BUS 360, 362 (or CMPT 370), 60 units.

**BUS 466-3 Web-Enabled Business**

Explores strategic issues and technologies in contemporary web-based business, from the evolution of business applications on the Internet through to contemporary Open Source and Web 2.0 applications. In depth exploration of new technology and business applications related to these technologies. Prerequisite: BUS 237, 360; 60 units.

**BUS 468-3 Managing Information Technology for Business Value**

Focuses both on current issues (e.g. build/buy, outsourcing, alignment) and emerging issues (e.g. social networking, utility computing, knowledge management and privacy) in obtaining value from information technology. Prerequisite: BUS 237, 360; 90 units. Recommended: BUS 362.

**BUS 472-3 Seminar in Organizational Behavior**

Advanced topics in organizational behavior. Specific emphasis may vary depending on special interest of faculty. However, general content will extend basic theories and problem descriptions covered in BUS 272 and 374 and will include advanced organizational theory and special topics in personnel. Prerequisite: BUS 272 (or 372) or 374; 360; 60 units.

**BUS 473-4 Operations Management**

The management of operating systems including allocation and scheduling of resources; control of costs, inventories, quality, and manpower; design of operating systems including location, layout and manpower; establishment of work methods and standards. Prerequisite: BUS 336, 360; 60 units.

**BUS 474-3 Supply Chain Management**

Exploration of the entire network of companies that work to design, produce, distribute, service and recycle their goods and services to customers. Efficient flow of information, material and finances along the entire chain allows firms to collaborate in a manner that benefits both corporations and customers. Analysis of the broader supply chain enables improvements in procurement, customer response time, risk sharing, on-time delivery, inventory levels, and transportation and global logistics. Prerequisite: 60 units; BUS 360 and 336. Students who have taken BUS 490-495 under this topic may not take this course for further credit.

**BUS 477-4 New Venture Planning**

Emphasis will vary but may include in any given term consideration of small business in the Canadian economy, career comparisons in small and large businesses, evaluation of new ventures, organization, capitalization, planning, marketing and financial management. Prerequisite: BUS 312, 343, 360; 90 units.

**BUS 478-3 Strategy**

Integration of the various areas of business for the purpose of analysing and recommending strategies for planning and decision-making within the firm and a defined environment. Prerequisite: BUS 207 (or ECON 301), 312, 343, 360W and either BUS 374 or 381; 90 units.

**BUS 480-3 Negotiation/Conflict Resolution for Integrated Studies Programs**

Overall, the course will be a combination of theory, discussion, instructor demonstration, skill practice in large and small groups and small group practice of the four-stage negotiation/conflict resolution model/process. The students in this course will learn about and be able to discuss interest-based negotiation and conflict resolution theory, strategize and plan for various negotiations and conflict situations and be able to put into practice a practical, efficient and productive process for negotiating agreements and resolving conflict. Prerequisite: BUS 360; 60 units. This course is only open for credit to students in the Integrated Studies Program within the bachelor of general studies degree.

**BUS 481-3 Recruitment and Selection**

Design and administration of recruiting and selections mechanisms. Analysis of procedures and skills that are used to translate strategic objectives into staffing decisions. How these mechanisms are affected by internal and external factors such as person-organization fit, labor markets, government legislation and technology. Prerequisite: BUS 381 and 360; 60 units.

**BUS 482-3 Performance Management**

The design and implementation of performance management systems. How these systems articulate organizational mission, strategy and goals, provide organizational and individual standards, and integrate systems and procedures within the context of organizational culture and practices. Prerequisite: 60 units; BUS 272, 381 and 360.

**BUS 484-3 Employment Systems**

Examination of the day-to-day administration of various employment systems in both unionized and non-unionized settings. Employment systems have implications for how conflicts between employee and employer interests are resolved, for the attainment of due process in the workplace, and for the flexibility and efficiency of work organization. Characteristics and outcomes of various employment systems will be examined. Prerequisite: 60 units; BUS 381 and 360.

**BUS 485-3 Negotiations and Conflict Management**

Negotiation is the art and science of securing agreements between two or more parties that are

interdependent and who are seeking to maximize their outcomes. The purpose of this course is to understand the theory and processes of negotiation as it is practiced in a variety of settings. The course will allow participants the opportunity to develop these skills experientially and to understand negotiation in useful analytical frameworks. Prerequisite: 60 units; BUS 272 and 360. Students with credit for BUEC 485 may not take BUS 485 for further credit.

#### **BUS 486-3 Leadership**

Addresses theoretical foundation and research associated with leadership, including a critical assessment of what leaders do. Issues such as gender and leadership, leadership ethics, and culture and leadership will be examined. Prerequisite: 60 units; BUS 272, 360. Students who have taken BUS 490-495 under this topic may not take this course for further credit.

#### **BUS 487-3 Organizational Development and Change Management**

Theories and methods of planned change in organizations with an emphasis on the psychological, cultural and structural issues of implementing change. Prerequisite: BUS 360, 60 units, BUS 374 or 381.

#### **BUS 488-3 Group Dynamics and Teamwork**

Interpersonal and group behavior in organizational contexts, including group development, team building, interpersonal communications, interpersonal conflict, group problem-solving and decision-making. Prerequisite: BUS 360, 60 units, BUS 374 or 381.

#### **BUS 490-3 Selected Topics in Business Administration**

The subject matter will vary from term to term depending upon the interest of faculty and students. Prerequisite: as stated by the faculty at the time of offering; 60 units. This course is only open for credit to students in the Integrated Studies Program within the Bachelor of General Studies degree completion program.

#### **BUS 491-3 Selected Topics in Business Administration**

The subject matter will vary from term to term depending upon the interest of faculty and students. Prerequisite: as stated by the faculty at the time of offering; 60 units. This course is only open for credit to students in the Integrated Studies Program within the Bachelor of General Studies degree completion program.

#### **BUS 492-3 Selected Topics in Business Administration**

The subject matter will vary from term to term depending upon the interests of faculty and students. Prerequisite: as stated by the faculty at the time of offering; 60 units.

#### **BUS 493-3 Selected Topics in Business Administration**

The subject matter will vary from term to term depending upon the interests of faculty and students. Prerequisite: as stated by the faculty at the time of offering; 60 units.

#### **BUS 494-3 Selected Topics in Business Administration**

The subject matter will vary from term to term depending upon the interests of faculty and students. Prerequisite: as stated by the faculty at the time of offering; 60 units.

#### **BUS 495-3 Selected Topics in Business Administration**

The subject matter will vary from term to term depending upon the interests of faculty and students. Prerequisite: as stated by the faculty at the time of offering; 60 units.

#### **BUS 496-5 Selected Topics in Business Administration**

The subject matter will vary from term to term depending upon the interests of faculty and students. Prerequisite: as stated by the faculty at the time of offering; 60 units.

#### **BUS 498-3 Directed Studies**

Independent reading and research on topics selected in consultation with the supervising instructor. Prerequisite: permission of the faculty; 60 units.

#### **BUS 499-5 Directed Studies**

An intensive and independent reading and research course on topics selected in consultation with the supervising instructor, and approved by the dean of the faculty. Prerequisite: permission of the faculty; 60 units.

#### **BUS 507-4 Managerial Economics**

The course combines economic theory and quantitative methods techniques to develop models and rules for managing resources efficiently. Prerequisite: introductory statistics/computing/mathematics, or permission of the instructor.

#### **BUS 512-4 Introduction to Business Finance**

An overview of the investment and financing decisions of firms. Topics to be covered include valuation, the capital expenditure decision, financial markets, and financial and dividend policy. Prerequisite: BUS 507 and 528 or permission of the instructor.

#### **BUS 527-3 Financial Accounting**

Concepts, principles and contemporary issues in financial accounting from the user perspective. Prerequisite: introductory statistics, computing, calculus or permission of the instructor.

#### **BUS 528-3 Managerial Accounting**

Concepts and principles of managerial accounting focussing on the use of accounting information by internal decision makers. Prerequisite: BUS 527 or equivalent course.

#### **BUS 536-4 Quantitative Methods in Management**

The objective of this course is to supply prospective managers with the skills necessary to make effective use of formal quantitative analyses, whether those analyses are performed by themselves or by a technical specialist. The course is intended for students with diffuse interests and diverse backgrounds who nevertheless have a common objective of enhancing their abilities to confront complex management decisions in a practical fashion. Prerequisite: introductory statistics/computing/mathematics, or permission of the instructor.

#### **BUS 543-4 Introductory Graduate Marketing**

The marketing of products and related services to business and other non-consumer sector buyers. Prerequisite: introductory statistics/computing/mathematics, or permission of the instructor.

#### **BUS 550-2 Financial Accounting**

Concepts and principles in financial accounting from the user perspective.

#### **BUS 551-2 Managerial Accounting**

The use of accounting information for managerial decisions. Prerequisite: BUS 550 or equivalent.

#### **BUS 552-4 Managerial Economics**

Applications of economic theory to business problems.

#### **BUS 553-2 Quantitative Business Methods**

The use of quantitative or statistical techniques in managerial decision making.

#### **BUS 554-2 Management Information Systems**

The design and implementation of information systems to provide appropriate and timely information to management.

#### **BUS 555-4 Managerial Finance**

An overview of investment and financing decisions of the firm, including valuation, capital expenditures, financial markets, dividend and financial policy. Prerequisite: BUS 550 and 553 or equivalent.

#### **BUS 556-4 Marketing Management**

An introduction to the application of pricing, promotion, channel selection and product planning to marketing decisions.

#### **BUS 557-4 Human Relations**

#### **Management/Organization Behavior**

Issues in the behavior of people in organizations, and human resource management practices that influence employee behavior.

#### **BUS 558-3 Special Topics**

#### **BUS 559-4 Special Topics**

#### **BUS 560-3 Directed Studies**

Prerequisite: requires prior permission of the academic director.

#### **BUS 561-2 Special Topics**

#### **BUS 562-2 Special Topics**

#### **BUS 572-4 Organizations and Human**

#### **Resource Management**

This course introduces students to theories of organizational behavior and organization theory. The student will be expected to develop an understanding of issues in the management of people and work and the design and functioning of organizations. The course will cover concepts of motivation, leadership, decision-making, power and politics, structure, environments and organizational effectiveness. The course will also introduce students to the major professional fields in organizational behavior, industrial relations, personnel, and organizational development. Prerequisite: introductory statistics/computing/mathematics, or permission of the instructor.

#### **BUS 578-4 Strategic Management**

The course focuses on the managerial tasks of developing and implementing organizational strategy and the processes involved. Prerequisite: BUS 507, 527, 536, 543.

#### **BUS 601-2 Data and Decision-Making**

This course explores the application of quantitative methods to managerial decision-making. Topics will include data analysis and statistical description, sampling and statistical inference, and regression analysis. Case studies are used to help managers cope with decision-making in complex and uncertain circumstances.

#### **BUS 602-4 International Management**

Will examine the international context of business including global trends in international trade, analyses of emerging markets, strategic alliances, and the human, cultural and ethical issues arising from doing business abroad.

#### **BUS 603-4 Structure and Change in Organizations**

This course applies contemporary organizational theory to the managerial challenges of entrepreneurial, corporate, public sector and not-for-profit organizations in the areas of organizational structure and change, adapting the organizations to their changing environment, and articulating alternate plans for organizational survival (and where possible, growth).

#### **BUS 604-4 Organizational Change and Development**

An examination of the concepts, principles and assumptions of organization development.

**BUS 606-4 Finance**

Provides a solid grounding in the principles of business finance. Students are introduced to important financial tools and gain an appreciation of how business decisions impact financial performance and shareholder value.

**BUS 607-4 Strategy**

Analysis of strategic issues affecting the success of the total enterprise and its sub-units. The course includes industry analysis, internal analysis of the core competencies and value chains that enable corporate and business level strategies, the evolution of strategy and how that occurs in different environments and organizational types, and implementation issues organizations face when enacting strategies.

**BUS 610-2 Directed Studies in Business Administration**

Individual study with a faculty member. The course outline must be approved by the graduate program committee.

**BUS 611-4 Directed Studies in Business Administration**

Individual study with a faculty member. The course outline must be approved by the graduate program committee.

**BUS 612-4 Directed Studies in Business Administration**

Individual study with a faculty member. The course outline must be approved by the graduate program committee.

**BUS 615-4 Marketing Management**

An analysis of the strategic consideration of marketing management and their impact on the firm and its competitors.

**BUS 621-4 Information Technology and Organizational Transformation**

A seminar format will be used to discuss the concepts and frameworks essential to the effective management of information technology. Our focus will be on the strategic role that information systems play in organizations, their structure and components, and various perspectives on how to plan and manage this technology.

**BUS 632-2 Operations Management**

Focuses on the processes by which goods and services are produced and the impact of operations on corporate strategy and elements in the value chain.

**BUS 651-4 Managerial Economics**

The application of modern microeconomic theory to problems of managerial decision-making. The importance of both economic models and quantitative applications are explained. Topics include demand, cost and productivity analysis; the analysis of market structure and firm strategy, international competition and trade; organizational economics; and the analysis of risk, uncertainty and information.

**BUS 652-2 Special Topics in Business Administration**

Course content varies from term to term. Specific course outlines must receive prior approval of the graduate program committee.

**BUS 653-2 Special Topics in Business Administration**

Course content varies from term to term. Specific course outlines must receive prior approval of the graduate program committee.

**BUS 654-2 Special Topics in Business Administration**

Course content varies from term to term. Specific course outlines must receive prior approval of the graduate program committee.

**BUS 655-2 Special Topics in Business Administration**

Course content varies from term to term. Specific course outlines must receive prior approval of the graduate program committee.

**BUS 660-4 Special Topics in Business Administration**

Course content varies from term to term. Specific course outlines and bibliographies must receive prior approval of the graduate program committee.

**BUS 661-4 Special Topics in Business Administration**

Course content varies from term to term. Specific course outlines and bibliographies must receive prior approval of the graduate program committee.

**BUS 662-2 Negotiations**

Negotiation is the art and science of securing agreements between two or more parties that are interdependent and who are seeking to maximize their outcomes. The central issues of this course deal with understanding behavior of individuals, groups and organizations in the context of competitive situations.

**BUS 663-4 Special Topics in Business Administration**

Course content varies from term to term. Specific course outlines and bibliographies must receive prior approval of the graduate program committee.

**BUS 670-3 Financial Accounting**

The development and analysis of financial statements and their role in financial and strategic decisions.

**BUS 681-4 Leadership and Teamwork**

Leadership theory, interpersonal relations and group dynamics in organizational life, and the development of perceptual and communication skills in small groups.

**BUS 688-4 Industrial Relations**

Collective bargaining, the collective agreement, work stoppages, arbitration and the legal environments.

**BUS 689-3 Special Topics in Business Administration**

Course content varies from term to term. Specific course outlines and bibliographies must receive prior approval of the graduate program committee.

**BUS 691-2 Business and Government**

Examines the rationale for and nature of government intervention, and the impact of public policies on business.

**BUS 696-6 Applied Project**

Students will undertake a strategic firm analysis or public policy analysis (public sector students). Students may undertake other types of projects with permission of the executive MBA director. The project is submitted to the library. Prerequisite: BUS 607, 691.

**BUS 698-4 Directed Studies in Business Administration**

Individual study with a faculty member. The course outline must be approved by the graduate program committee.

**BUS 701-2 Strategy**

Strategic management requires a dynamically oriented analysis of markets, industries and the companies within those industries. The goal of strategic management is to proactively develop strategies to create and sustain competitive advantage. Participants will gain an understanding of what strategy is, how it is constrained, formulated, developed and implemented.

**BUS 702-3 Marketing Management**

An introduction to the application of pricing, promotion, channel selection and product planning to marketing decisions. The strategic consideration of

marketing management and its impact on the firm will be discussed.

**BUS 703-3 Managerial Economics**

Applications of economic theory to business problems. The importance of economic models and quantitative applications will be explained. Topics include demand, cost and productivity analysis; the analysis of market structure and firm strategy; and the analysis of risk, uncertainty and information.

**BUS 704-3 Leadership and Team Building**

Using laboratory education methods, this course will provide students with personalized feedback and coaching on interpersonal skills. Skills like leadership, coaching, team building, persuading, negotiating and managing conflict will be refined. Students will also be exposed to methods in observing and influencing group processes.

**BUS 705-3 Financial/Managerial Accounting**

Analysis of financial statements and their role in organizational life. Concepts and principles in financial accounting from a user perspective. The use of accounting information for managerial decisions.

**BUS 706-2 Data and Decisions**

The use of quantitative or statistical techniques in managerial decision-making.

**BUS 707-2 Ethical Decision Making**

An examination and review of contemporary thinking on the changing role of business and business persons in the operations of society. The course explores the changing legal, ethical, and regulatory environments of business focusing on the critical alignments of values, policies, technology and legal approaches between the modern organization and its broader public.

**BUS 708-3 Finance**

An overview of investment and financing decisions of the firm, including valuation, capital expenditures, financial markets, dividend and financial policy. Prerequisite: 705.

**BUS 709-3 Managing Information**

This course will introduce students to the theories and practices concerning the management and the application of Information Technology (IT) in organizations. Skills in analyzing complex situations in a holistic manner will be reinforced through the use of case methods. Technical aspects of information technology will be discussed.

**BUS 710-3 Emerging Markets**

This course focuses on managerial challenges facing firms that operate (or intend to operate) in emerging markets, and ways in which these challenges can be addressed. Such challenges refer to interfaces between firms and elements in their internal and external environments.

**BUS 711-3 Negotiation and Conflict Resolution**

Students will learn about interest-based negotiation and conflict resolution theory, strategize and plan for various negotiations and conflict situations and be able to put into practice a practical, efficient, and productive process for negotiating agreements and resolving conflict.

**BUS 712-3 Cross-Cultural Management**

Exposure to the dilemmas and opportunities that arise within international and multicultural work environments needed in dealing with a global business environment. Strategies for adopting organizational practices that address these issues will be discussed. Emphasis will be placed on the management of people and groups in international organizations. The focus of the course is on the interaction between people in international work settings rather than interactions between specific countries and/or cultures.

**BUS 713-3 Essays**

Students will undertake an essay that will generally fall into two of the following three categories: 1. an industry analysis; 2. a firm level analysis; 3. a regional analysis. Other topics of analyses will be considered on a case-by-case basis. Prerequisite: 30 units of course work in the MBA program.

**BUS 714-3 New Ventures**

The purpose of this course is to teach the basic skills of venturing — how to translate an entrepreneurial vision into action. The course also provides an opportunity for participants to explore their personal situation and assess the desirability of an entrepreneurial career.

**BUS 715-3 Operations Management**

Students will examine the processes and methods that enable organizations to achieve better productivity, quality, time and information performance. Design and control aspects of effective operations management as they relate to service and manufacturing entities will also be discussed. The course will explore the management of operating systems, including allocation and scheduling of resources; control of costs, inventories, quality, and manpower; design of operating systems including location, layout and manpower; establishment of work methods and standards.

**BUS 716-3 Sustainability**

Students will explore how businesses are realigning or reinventing their organizations toward more sustainable business models. Developments that enable organizations to reduce their firms' negative environmental and social impacts while increasing profits and competitive advantage will be discussed. Students will also learn about management systems and initiatives for improving the environmental and social performance of organizations and the business system as a whole.

**BUS 717-1.5 Essays (completion)****BUS 727-0 MBA Internship**

Two to eight month internship is for the MBA students and takes place in their last semester. Approved entrepreneurial projects will also be accepted. The associate directors of the Business Career Management Centre must be contacted prior to registration for this course. Students must be current graduate students in the MBA program, and must have a CGPA and previous SGPA of at least 3.0.

**BUS 750-4 Managing Technological Innovation**

This course examines successful product and process innovations in industry, as well as the effective organization and management of the technological change process in new ventures, multi-divisional and multinational enterprises.

**BUS 751-4 Managerial Economics for Technology Firms**

The purpose of this course is to introduce students to basic concepts in microeconomics and to explore the relevance of economic reasoning to managerial decision-making, both tactical and strategic. The importance of economic concepts, economic models and quantitative applications will be emphasized and applied to problems regularly encountered by technology managers.

**BUS 752-4 Strategic Management of Technology-Based Firms**

This course deals with how technology-based firms develop and implement strategies to create competitive advantage. The module treats strategy at two levels of analysis: (a) the overall strategy of the firm and (b) the technology strategy of the firm.

**BUS 753-2 Ethics and Corporate Responsibility**

This course addresses how to navigate the moral quandaries, issues and debates raised by direct participants and stakeholders in the high-tech

economy. Topics include character building practices, moral stages in the high-tech career, corporate social responsibility, the role of reputation capital in the high-tech firm, and the moral and legal obligations of the expert.

**BUS 754-4 Marketing Tech-based Products and Services**

What differentiates high-tech markets from more traditional ones is the environment — shrinking product life cycles, rapid changes in information and knowledge and great uncertainty about competitors. This course is designed to teach strategies for developing and executing marketing strategies in technology-intensive markets.

**BUS 755-2 Topics in International Business**

This course will address emerging issues in international business relevant to technology intensive firms. Globalization means that cross-cultural business interactions have become more commonplace.

**BUS 756-4 Strategic Use of Information and Knowledge**

This course will demonstrate, through cases and discussion, how information can be used to support decision-making, monitor operations and enable global communications. Topics will include knowledge management and information technology to support a learning organization.

**BUS 758-4 Business Operations Design**

The Business Operations Design course integrates organizational theory and operations management theory to provide a working knowledge of the key elements involved in designing and operating organizations. The aim is to introduce students to the best current thinking for creating effective organizational configurations that realize a desired strategy and achieve the accompanying performance.

**BUS 759-4 Special Topics**

This course provides flexibility to address emergent topics in Technology Management.

**BUS 761-2 Leadership for the Technology Driven Enterprise**

Developing and balancing critical management competencies at the individual, interpersonal, team and organizational levels. Focus is on effective organization, motivation and leadership.

**BUS 762-4 Project Management**

In high technology firms, projects are a way of life. The introduction of a new product or service, the redesign of an information system, and the opening of a new warehouse are all examples of projects that the technology-driven manager may encounter. This course demonstrates how complexity can be managed in a manner that increases the probability of project success. As a course assignment, students develop their own plan for the project/internship phase of the program.

**BUS 763-2 Managing Self and Others: An Organizational Simulation**

An intensive 3-day simulation where students discover what they would actually do when confronted with the reality of working in a company with multiple interdependencies, financial and geographical constraints and a complex and changing environment. Graded on a Satisfactory/Unsatisfactory basis.

**BUS 764-4 Financing the Organization**

The objective is to teach the foundations of applied finance with respect to the capital raising process and the creation of finance-able business plans. A company 'life cycle' approach to financial development is utilized and topics explored include the entrepreneurial process, angel and venture capital financing, legal entities and capital structure, term sheet negotiations, business valuation

techniques, going public, debt financing, mergers and acquisitions, financial contracting.

**BUS 766-4 Financial and Managerial Accounting**

Concepts and principles in financial accounting from the user perspective and the use of accounting information for managerial decision-making.

**BUS 770-2 Special Topics****BUS 771-2 Special Topics****BUS 772-2 Special Topics****BUS 773-2 Special Topics****BUS 774-4 Special Topics****BUS 776-4 Special Topics in Biotechnology****BUS 778-4 Directed Studies in Management of Technology**

Individual study with a faculty member. A course outline must be approved by the graduate program committee.

**BUS 780-6 Applied Project**

Students will undertake a strategic business analysis and write an extended essay jointly supervised by a Simon Fraser University faculty member and an industry partner. The Management of Technology program director and a faculty member will negotiate the purpose, content and deliverables of each project with the student and the sponsoring organization.

**BUS 781-3 Applied Project (Completion)****BUS 802-3 Foundations of Financial Economics**

An introductory course in the theory of finance and investor behavior, financial decision-making under uncertainty as well as capital market equilibrium.

**BUS 803-3 Financial Econometrics**

Financial econometrics for testing asset pricing models and portfolio performance measurement.

**BUS 804-3 Strategic Analysis for Wealth Management**

Will teach students to analyse the competitive prospects for a given industry as well as specific companies within that industry. It will also include analysis of strategic choices in the financial services industry.

**BUS 805-3 Capital Markets**

Empirical issues in capital markets for wealth and asset management including topics in behavioral finance, and performance measurement and attribution.

**BUS 806-2 Client Relationship and Leadership Effectiveness I**

Emphasizes how to become an effective investment counsellor. Topics covered will include leadership styles, client relationship development, interpersonal communication, coaching/counselling strategies and skills, conflict and team management, and performance measurement. Information systems for effective client relationship management will also be covered.

**BUS 807-2 Client Relationship and Leadership Effectiveness II**

This course is a continuation of the concepts in BUS 806.

**BUS 808-2 Client Relationship and Leadership Effectiveness Practice**

Assists students in developing self-awareness and the ability to evaluate their leadership. Covers personal leadership plans, effective leadership practices and reflection-in-action and life-long learning practices.

**BUS 809-3 Equity Security Analysis and Portfolio Management**

Extends concepts covered in the financial economics course sequence to the valuation of equity securities. Topics include the components of fundamental and technical analysis for individual stocks, as well as an analysis of different investment strategies and styles.

**BUS 810-3 Fixed Income Security Analysis and Portfolio Management**

The term structure of interest rates, fixed income returns, yield-spread analysis, sources of risk in fixed income securities, and embedded options.

**BUS 811-3 International Security Analysis and Portfolio Management**

Extends equilibrium asset pricing models to an international context and analyses the implications on equity and fixed income security analysis and portfolio management. Students will be introduced to various international market indices and the role of international securities in investment portfolios. Currency hedging will also be covered.

**BUS 812-2 Tax and Estate Planning**

Provides students with an understanding of the implications of taxes and intergenerational wealth transfer on portfolio management. It will review basic elements of the tax system, tax-efficient investment vehicles and estate planning. Specific examples of the effect of these factors on investors' portfolios will be considered. This course will be taught in the context of Canadian tax law, but will also contain selected coverage of the tax codes of other countries, including the U.S. Mechanisms for implementing investors' charitable concerns will also be considered.

**BUS 813-2 Ethics, Wealth Management and the Securities Industry**

Reviews the regulatory framework for investment managers and analyses the types of ethical considerations that might arise. Specific topics will include the importance of knowing the client, the nature of fiduciary obligations, suitability, standards of care (i.e., the prudent person and produce expert rules) and the identification and proper management of conflicts of interest.

**BUS 814-3 Derivative Securities**

An introductory course in derivative securities that includes pricing as well as the use of derivative securities in portfolio management and structured transactions.

**BUS 815-4 Portfolio Theory**

A study of optimum portfolio selections and diversification of financial assets including cash vis-a-vis different classes of utility functions of final wealth. Also, an examination of the behavior of speculative prices and rates of return. Prerequisite: ECON 331. Offered once a year. This is the same course as BUS 815.

**BUS 816-3 Investment Policy**

A capstone course that focuses on the development of effective investment policy for high net worth as well as institutional investors. It integrates topics in previous courses and is closely linked to BUS 809 Client Relationship Management III.

**BUS 817-4 Theory of Capital Markets**

A study of capital market equilibrium theories, risk allocation, valuation models under perfect and imperfect markets and their empirical testing. Prerequisite: ECON 331, 835. Offered once a year. This is the same course as BUS 817.

**BUS 818-3 Advanced Topics in Business Finance**

Extensions of advanced topics beyond those covered BUS 802 and 805. Prerequisite: BUS 814 (co-requisite acceptable).

**BUS 819-3 Final Project for GAWM Students**

Students will be required to complete a written project equivalent to one full course. A project will generally represent successful research on a topic in asset and wealth management. The project will be supervised by faculty members, but members of the broad investment management community may also participate in the supervisory committee as second readers when appropriate. We hope that topics

proposed by members of the Business Council may be suitable from time to time.

**BUS 820-2 Final Project (Completion)****BUS 821-2 Final Project for Financial Risk Management Students (Completion)**

**BUS 823-2 Introduction to Security Analysis**  
This is a course in the PhD program on a selected topic. Prerequisite: enrolment in GAWM program.

**BUS 856-4 Special Topics in Financial Risk Management**

A course outline must be approved by the Business Graduate Program Committee.

**BUS 857-3 Numerical Methods**

Computational tools for financial analysis, financial engineering and risk management.

**BUS 859-4 Directed Studies in Financial Risk Management**

Individual study with a faculty member. A course outline must be approved by the Business Graduate Program Committee.

**BUS 863-3 Operational Risk Management**

Tools for identifying, measuring, monitoring and mitigating operational risks. Techniques include causal modeling and simulation.

**BUS 864-3 Credit Risk Management**

Credit risk management with emphasis on portfolio models, including probability of default and loss given default models, credit capital allocation, active portfolio management, credit derivatives, and structured transactions.

**BUS 865-3 Market Risk Management**

Value at risk, advanced market risk models, statistical models, stress testing, scenario analysis, and risk-adjusted performance measurement.

**BUS 866-3 Enterprise-wide Strategic Risk Management**

Strategic risks facing organizations and the economic forces driving strategic hedging with an analytical framework for measuring industry and firm structure and financial market volatility.

**BUS 867-2 Accounting for Financial Instruments**

Provides a comprehensive definition of all types of financial instruments and develops a thorough understanding of operational accounting and auditing for a broad range of financial instruments.

**BUS 868-3 Perspectives on Risk and Insurance**

Economic principles, concepts, and practice of risk and insurance.

**BUS 869-3 Topics in Risk Management**

Integrative and topical issues in financial risk management.

**BUS 870-3 Final Project for Financial Risk Management Students**

A risk management research project, completed within the final academic term, based on ideas generated in previous terms, with in-class sessions on topic development, presentation, and reporting of findings as well as regular meetings with a designated supervisor. Project may be done individually or in pairs.

**BUS 974-4 Financial Econometrics****BUS 975-2 Selected Topics IV**

This is a course in the PhD program on a selected topic.

**BUS 976-2 Selected Topics V**

This is a course in the PhD program on a selected topic.

**BUS 977-2 Selected Topics VI**

This is a course in the PhD program on a selected topic.

**BUS 978-2 Selected Topics VII**

This is a course in the PhD program on a selected topic.

**BUS 980-4 Theory Development in Business Administration**

The effective use of empiricism, positivism, and interpretive explanations in generating, defending and clarifying logically rigorous arguments is explored. Participants from diverse fields (marketing, international business, management studies, accounting, policy analysis, finance, etc.) within the administrative sciences will look at the processes which have guided theory development and theory testing within their field of inquiry. Attention will focus on what criteria are used to assess the adequacy of explanations and useful theories. The seminar seeks to advance the participants' interest in putting theory into practice. Prerequisite: Enrolment in PhD program.

**BUS 981-4 Research Methods in Business Administration**

Provides an overview of the major quantitative and qualitative analytical methods associated with empirical research in Business Administration. This seminar is aimed at providing an overview of the research process, an introduction to a range of research techniques and data analysis appropriate to those techniques. It should develop participants' skills for designing research as well as an ability to critically assess research reported in the literature. To do this, the course will focus on various approaches to research design, discuss the kinds of analyses appropriate to those designs, and introduce computer packages for data analysis, such as Statistical Package for Social Sciences (SPSS). Prerequisite: enrolment in PhD program.

**BUS 982-4 Dissertation Development Workshop**

This seminar is intended to support doctoral students in the early stages of the development of their dissertations. Practical and conceptual issues with respect to the integration of theory, research design, and methodology will be explored. The seminar will provide a forum for students to share their dissertation work in progress, and learn from each other with respect to theoretical, analytical, and methodological problems, successes and trade-offs. Prerequisite: enrolment in the PhD program or consent of the instructor.

**BUS 983-4 Directed Studies I**

Supervised individual study on a topic of the student's choice, under the guidance of one or more faculty. Arrangements for this course must be approved by the graduate chair in advance of enrolment. Prerequisite: enrolment in PhD program.

**BUS 984-4 Directed Studies II**

Supervised individual study on a topic of the student's choice, under the guidance of one or more faculty. Arrangements for this course must be approved by the graduate chair in advance of enrolment. Prerequisite: enrolment in PhD program.

**BUS 985-4 Directed Studies III**

Supervised individual study on a topic of the student's choice, under the guidance of one or more faculty. Arrangements for this course must be approved by the graduate chair in advance of enrolment. Prerequisite: enrolment in the PhD program.

**BUS 986-4 Directed Studies IV**

Supervised individual study on a topic of the student's choice, under the guidance of one or more faculty. Arrangements for this course must be approved by the graduate chair in advance of enrolment. Prerequisite: enrolment in PhD program.

**BUS 987-4 Selected Topics I**

Specialized study in topics germane to the program, but not covered extensively in other core courses. Prerequisite: enrolment in PhD program.

**BUS 988-4 Selected Topics II**

Specialized study in topics germane to the program, but not covered extensively in other core courses. Prerequisite: enrolment in PhD program.

**BUS 989-4 Selected Topics III**

Specialized study in topics germane to the program, but not covered extensively in other core courses. Prerequisite: enrolment in PhD program.

**BUS 990-4 Research Project**

PhD students will generate a research project in their third term that will be graded by the senior supervisor on a pass/fail basis. The student can rewrite the project once. If the grade is still deficient, they will be asked to withdraw from the program. Those who pass the research project will present it in an open research presentation. Questions and answers emerging in this context should assist the student to develop their research. Prerequisite: enrolment in PhD program.

**BUS 991-0 PhD Comprehensive Exam**

Students will be required to pass a comprehensive exam in the sixth term of the program. This will include written examinations in each student's major and methodology minor followed by an oral exam. Graded on a Satisfactory/Unsatisfactory basis. Prerequisite: enrolment in PhD program.

**BUS 992-4 PhD Thesis**

Prerequisite: enrolment in PhD program.

## Business Administration and Economics BUEC Faculties of Business Administration, and Arts and Social Sciences

**BUEC 232-4 Data and Decisions I**

An introduction to business statistics with a heavy emphasis on applications and the use of EXCEL. Students will be required to use statistical applications to solve business problems. Prerequisite: MATH 157 and 15 units. MATH 157 may be taken concurrently with BUEC 232. STAT 270, Introduction to Probability and Statistics, will be accepted in lieu of BUEC 232. Students with credit for STAT 270 may not take BUEC 232 for further credit. Quantitative.

**BUEC 280-3 Introduction to Labor Economics**

Basic analysis of the labor market and the industrial relations system with emphasis on the major issues of public policy in Canada. Prerequisite: ECON 103 or 200 and 105 or 205. Students who have taken ECON 301, 305 or 381 may not take BUEC 280 for further credit. Quantitative.

**BUEC 333-4 Statistical Analysis of Economic Data**

An introduction to the use and interpretation of statistical analysis in the context of data typical of economic applications. Prerequisite: ECON 103 or 200; ECON 105 or 205; BUEC 232 or STAT 270; MATH 157; 60 units. Students with a minimum grade of A- in BUEC 232 or STAT 270 can take BUEC 333 after 30 units. Students seeking permission to enrol based on their BUEC 232 or STAT 270 grade must contact the Undergraduate Advisor in Economics. Students with credit for ECON/COMM 236 may not take BUEC 333 for further credit. Quantitative.

**BUEC 391-3 Law in the Economic Society**

An introductory examination of the history, evolution and aspirations of the rule of law in general, and as pursued and developed within civil and common law jurisdictions with emphasis on the working of the Canadian Federal and Provincial legislative,

administrative and judicial forces, in particular.

Students will be encouraged to identify and analyse various socio-economic legal issues and how legal principles are developed within the concepts of Canadian law and its reaction to evolving socio-economic forces that affect our individual and collective legal rights, duties and privileges and powers. Prerequisite: 60 units. BUEC 391 may not be taken concurrently with BUS 393. Students with credit for BUEC 293 may not take BUEC 391 for further credit.

**BUEC 396-3 The Structure of Industry**

Examination of the structure, conduct and performance of specific industries, exploring the degree of concentration, the nature and extent of competitive behavior and the factors affecting particular industry patterns. Emphasis will be upon the Canadian economy, and consideration will be given to the efforts and implications of 'non-pure' competitive structures. Prerequisite: ECON 103 or 200 and 105 or 205; 60 units. Quantitative.

**BUEC 397-5 Government and Business**

The theory and practice of the control of monopoly and maintenance of competition. The need for development of public policies with regard to the regulation of business activity; anti-competitive business practices; anti-trust legislation in Canada and the United States and its judicial interpretation; the preservation of competition as a means of regulating private business; alternative approaches to the monopoly problem. Prerequisite: ECON 103 or 200 and 105 or 205; 60 units.

**BUEC 427W-3 Industrial Organization: Law and Economics**

An in depth examination of the application of economic reasoning to the law. The course considers how legal relationships influence behavior and how economic models can explain the structure of the law. A selected number of topics will be covered, and may include the economic approach to common law; property rights; contracts; torts; criminal behavior; family law; and corporate bankruptcy law. Prerequisite: ECON 301. Students with credit for BUEC 495 cannot take this course for further credit. Writing.

**BUEC 433-5 Forecasting in Business and Economics**

Modern techniques of statistical, econometric, population and technological forecasting are presented along with discussions of a wide range of topics including Box-Jenkins methods, leading indicators, survey data, world models and the use of information sets of increasing size. Applied work on the Canadian and BC economies. Prerequisite: BUEC 333; 60 units.

## Canadian Studies CNS Faculty of Arts and Social Sciences

*Students will no longer be admitted to the Canadian studies major, minor, honors or joint major programs effective for the fall 2009 term. Also, Canadian studies courses will not be offered after the summer 2009 term. Students contemplating entering one of these programs are advised to check with the advisor.*

**CNS 160-3 The Social Background of Canada**

This course analyses the foundations and attributes of modern Canadian society using an interdisciplinary approach. As an introduction to Canadian Studies, the major themes of the course are social conflict and social change. Topics include French-English relations, Canada and the United States, ethnicity and multiculturalism, industrialism, regional conflict, social movements, nationalism and Canada's social structure, classes and elites. Breadth-Social Sciences

**CNS 210-3 Foundations of Canadian Culture**

An introductory study of Canada, which uses a variety of disciplinary methods to understand and assess Canada's unique culture. The course draws on material from history, law, literature, politics, sociology and the fine arts in order to explore regional diversity and national needs and the nature of Canada as a bilingual and multicultural state. Breadth-Humanities

**CNS 250-3 Perspectives on the Environment in Canada**

Environmental issues and attitudes toward the environment in Canadian society and thought, drawing on a variety of interdisciplinary sources. Students who have taken CNS 391 under this topic may not take this course for further credit. Breadth-Social Sciences.

**CNS 260-3 Screening Canadian Experience**

Explores the Canadian experience through film and text.

**CNS 280-3 Canadian Political Economy**

An introductory study of Canada's political economy, stressing the interrelated nature of Canada's economic and political life. The course focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism. This course is identical to POL 223 and students cannot take both courses for credit.

**CNS 360-4 Interdisciplinary Readings in Canadian Studies**

Allows students to pursue in depth a particular Canadian problem from an interdisciplinary perspective. Prerequisite: 60 units. Please refer to course outline before enrolling.

**CNS 390-3 Hockey in Canadian Popular Culture**

The game of hockey is perhaps the most central and pervasive form of popular culture in Canada. It has been called the 'tie that binds,' the 'common passion,' and the 'Canadian game.' This course seeks to create a critical understanding of how hockey's significance extends far beyond the ice rink into the cultural, economic and political spheres of Canadian society. Prerequisite: at least 60 units. Students who have taken this course as CNS 390 Topics in Canadian Popular Culture cannot take this course for further credit.

**CNS 391-3 Special Canadian Topics**

An intensive interdisciplinary exploration of particular topics that illustrate aspects of the Canadian reality. Prerequisite: 60 units.

**CNS 393-3 Popular Culture in Canada**

Examines selected structures of Canadian popular culture focusing on specific theme(s) such as humor, popular literature, music, entertainments, culture and economy, etc. Prerequisite: 60 units. Students who have taken CNS 391 with same title may not take this course.

**CNS 481-3 Special Regional Topics**

The role of the regions of regionalism in Canada is increasingly problematical, as the burden of the unity debate extends outwards from the Ontario/Quebec divide. This seminar will provide students with a grounding in interdisciplinary readings pertaining to the topic and an opportunity to pursue directed research on a specific topic of their choice. Prerequisite: 60 units. Students who have taken CNS 481 Special Topics may not take CNS 481 for further credit.

**CNS 485-3 Contemporary Canadian Thought**

Selected issues in contemporary Canadian thought. Prerequisite: 60 units.

**CNS 490-5 The Canadian Intellectual Tradition**

An interdisciplinary seminar examining some of the major forces that have shaped and continue to shape Canadian thought, expression and society. Materials and theories will be drawn from historiography, history, philosophy, religion, politics, political economy, policy studies, literature, art and sport. Prerequisite: at least 60 units.

**CNS 491-3 Technology and Canadian Society**

This course examines and assesses technology and its impact on Canadian society. It concentrates on 20th century technology and uses a case study approach examining some broad themes in the study of technology such as: technological determinism, technological impact assessment, innovation, technology as progress, technological dependency, technological sovereignty, and bias in technology. Prerequisite: at least 60 units. Breadth-Humanities

**CNS 493-4 Advanced Topics in Canadian Studies**

Interdisciplinary exploration of selected topics that illustrate aspects of Canadian reality. Prerequisite: 60 units.

**CNS 495-5 Canadian Studies Honors Essay**

An essay required of each honors student in Canadian Studies, based on a substantial interdisciplinary research effort by the student under the supervision of Canadian Studies faculty in the appropriate disciplines. A paper based on the essay must be presented in a Canadian Studies seminar. Prerequisite: enrolment as honors student in Canadian Studies.

## Chemistry CHEM Faculty of Science

**CHEM 110-3 Introductory Chemistry**

General fundamental concepts and nomenclature; stoichiometry and chemical calculations; nuclear and atomic structures, chemical bonding; properties of gases, liquids, solids and solutions; chemical kinetics and chemical equilibrium. This course has the same lecture component as CHEM 111 but no laboratory work. Students who intend to take further laboratory courses in chemistry must take CHEM 111. Prerequisite: BC high school mathematics 12 (or equivalent) or permission of the department. No previous training in chemistry is required for this course. Students with credit for high school chemistry 12 (or equivalent), or any university chemistry course may not take CHEM 110 or 111 for further credit. Students may not count both CHEM 110 and 111 for credit. Corequisite: If BC high school mathematics 12 credit not obtained, then MATH 100 must be taken as a corequisite to CHEM 110. Quantitative/Breadth-Science.

**CHEM 111-4 Introductory Chemistry and Laboratory**

General fundamental concepts and nomenclature; stoichiometry and chemical calculations; nuclear and atomic structures, chemical bonding; properties of gases, liquids, solids and solutions; chemical kinetics and chemical equilibrium. This course includes a laboratory component. Prerequisite: BC high school mathematics 12 (or equivalent) or permission of the department. No previous training in chemistry is required for this course. Students with credit for high school chemistry 12 (or equivalent), or any university chemistry course may not take CHEM 110 or 111 for further credit. Students may not count both CHEM 110 and 111 for credit. Corequisite: if BC high school Mathematics 12 credit not obtained, then MATH 100 must be taken as a corequisite to CHEM 111. Quantitative/Breadth-Science.

**CHEM 120-3 General Chemistry I**

Atomic and molecular structure; chemical bonding; thermochemistry; elements; periodic table; gases, liquids, solids, and solutions. This course has the same lecture component as CHEM 121 but no laboratory work. Students who intend to take further laboratory courses in chemistry must take CHEM 121. Prerequisite: BC high school chemistry 12 or CHEM 111 or CHEM 110 (or 101). Students may not count both CHEM 120 and 121 for credit. Recommended: MATH 151 (or 154) and PHYS 120 (or 101) as a corequisite. Quantitative/Breadth-Science.

**CHEM 121-4 General Chemistry and Laboratory I**

Atomic and molecular structure; chemical bonding; thermochemistry; elements; periodic table; gases, liquids, solids, and solutions. This course includes a laboratory component. Prerequisite: BC high school chemistry 12 or CHEM 111 (or 101 and 106). Students may not count both CHEM 120 and 121 for credit. Recommended: MATH 151 (or 154) and PHYS 120 (or 101) as a corequisite. Quantitative/Breadth-Science.

**CHEM 122-2 General Chemistry II**

Chemical equilibria; electrochemistry; chemical thermodynamics; kinetics. Students who intend to take further laboratory courses in chemistry should take CHEM 122 concurrently with CHEM 126. Prerequisite: CHEM 121 or 120 (or 102) Recommended: MATH 152 (or 155) and PHYS 121 (or 102) as a corequisite. Quantitative.

**CHEM 126-2 General Chemistry Laboratory II**

Experiments in chemical equilibrium, acids and bases, qualitative analysis, electrochemistry and chemical kinetics. Prerequisite: CHEM 121 (or 102 and 115). Corequisite: CHEM 122. Quantitative.

**CHEM 180-3 The Chemistry of Life**

A basic introduction to chemical kinetics, thermodynamics, electrochemistry, and equilibria as they apply to the structure and function of biomolecules. Concepts will be illustrated using modern examples of biological systems. Students will be introduced to central ideas and selected molecular engineering methods in biochemistry and molecular biology. Prerequisite: CHEM 121.

**CHEM 191-3 Living in a Materials World: From the Stone Age to Nanoscience**

A survey of materials that have been used throughout human history, from stone, bone and wood to modern plastics and superconductors. The chemical principles that give rise to different materials' properties will be examined, with an emphasis of how small changes at the molecular level can have important implications in everyday life. We will also trace the development of new materials and how they have been perceived and studied throughout the ages. Intended for both science and non-science students. Quantitative/Breadth-Science.

**CHEM 192-3 Chemistry in Your Home, Work, and Environment**

The impact of chemistry on modern living. Students will gain a broad perspective on chemical processes with historical, environmental and economic importance in shaping society, examining both the beneficial and harmful aspects of the chemicals that shape our lives. Topics may include: perfumes, explosives, drugs, dyes, plastics, pesticides and greenhouse gases. Intended for both science and non-science students. Quantitative/Breadth-Science.

**CHEM 193-3 Close Encounters of the Radioactive Kind**

An introduction to the concepts of radiation and nuclear science. Emphasis will be placed on applications; by the end of the term students will be able to make well-informed opinions on the role of

nuclear science and its use. Intended for both science and non-science students. Breadth-Science.

**CHEM 215-4 Introduction to Analytical Chemistry**

The principles of analytical chemistry and their practical application to solution samples. Titrimetric and electrochemical methods. Prerequisite: CHEM 122 (or 103) and 126 (or 118). Quantitative.

**CHEM 230-3 Inorganic Chemistry**

The chemistry of the elements and their inorganic compounds in terms of fundamental concepts of periodicity of properties, valence, ionization potential, electron affinity, electronegativity, stability of oxidation states, bonding, structure and stereochemistry. Co-ordination complexes and organometallic chemistry. Prerequisite: CHEM 122 (or 103). Corequisite: students who expect to take further courses in inorganic chemistry should take the laboratory course CHEM 236 concurrently with 230. Quantitative.

**CHEM 236W-3 Inorganic Chemistry Laboratory**

An introduction to the synthetic and spectroscopic techniques used in the preparation and characterization of both main group and transition metal compounds. Prerequisite: CHEM 122 and 126 (or 103 and 118). Corequisite: CHEM 230. Writing/Quantitative.

**CHEM 260-4 Atoms, Molecules, Spectroscopy**

Elements of physical chemistry from the molecular point of view. Introduction to quantum chemistry, atomic and molecular structure, and spectroscopy. Prerequisite: CHEM 122 (or 103), MATH 152, PHYS 121. Recommended: MATH 232. Quantitative.

**CHEM 281-4 Organic Chemistry I**

Structure, bonding, physical and chemical properties of simple organic compounds. Introduction to spectroscopy. Kinetics and mechanisms of organic reactions. This course includes a laboratory component. Prerequisite: CHEM 121. Corequisite: CHEM 122 (or 103). Quantitative.

**CHEM 282-2 Organic Chemistry II**

Polyfunctional organic compounds and complex organic reactions. Introduction to natural products. Prerequisite: CHEM 281. Quantitative.

**CHEM 286-2 Organic Chemistry Laboratory II**

Laboratory work chosen to complement CHEM 282. Prerequisite: CHEM 281. Corequisite: CHEM 282. Quantitative.

**CHEM 306-3 Practicum I**

This is the first term of work experience in a co-operative program available to students planning to pursue a career in chemistry or related areas. Units from this course do not count towards the units required for an SFU degree. Prerequisite: completion of 28 units in a science program, including first-year calculus, chemistry and physics. Minimum CGPA 2.67 (or permission of co-op co-ordinator).

**CHEM 307-3 Practicum II**

This is the second term of work experience in the Chemistry Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: CHEM 306 and completion of 42 units toward a BSc degree. Minimum CGPA 2.67 (or permission of co-op co-ordinator).

**CHEM 316-4 Introductory Instrumental Analysis**

Principles and applications of basic analytical instrumentation based upon spectroscopy, chromatography and electrochemistry. Prerequisite: CHEM 215 (or 218) and CHEM 260, or permission of the department. Students may not count both CHEM 316 and 416 for credit. Quantitative.



**CHEM 317-2 Analytical Environmental Chemistry**

Principles and applications of the methodologies of analytical chemistry employed in the determination of substances in air, water, and soil, with particular emphasis upon sampling and sample preparation. Prerequisite: CHEM 316 and 371. Corequisite: CHEM 372 should be taken concurrently. Quantitative.

**CHEM 332-3 The Chemistry of Transition Metals**

The synthesis and characterization of classical and organometallic complexes of the transition metals, and their physical and chemical properties. Prerequisite: CHEM 230, 236 and 260, or permission of the department. Quantitative.

**CHEM 333-3 Inorganic Chemistry of Biological Processes**

An introduction to the principles governing the formation, properties and investigation of metal-ligand complexes with special reference to the role of metals in biological processes. Prerequisite: MBB 321 (or BICH 301 or 321); or CHEM 282 (or 250) and CHEM 230 (or 232.) Quantitative.

**CHEM 336-2 Advanced Inorganic Chemistry Laboratory**

Laboratory experiments in co-ordination, organometallic and solid state chemistry, involving synthesis, characterization and spectroscopy. Prerequisite: CHEM 236. Corequisite: CHEM 332 must precede or be taken concurrently. Quantitative.

**CHEM 340-3 Materials Chemistry**

Bonding in solid state materials. Introduction to symmetry and its applications in materials science. Structure and physical properties of solid state materials. Prerequisite: completion of 60 units in a science or applied science program, including first year chemistry, physics and calculus. Quantitative.

**CHEM 360-3 Thermodynamics and Chemical Kinetics**

Elements of physical chemistry from the macroscopic point of view. Thermodynamics, and its applications to chemical equilibrium. Chemical kinetics and reaction rate theories. Prerequisite: CHEM 122 (or 103), MATH 152 (or 155), PHYS 121 (or 102). Recommended: MATH 251. Quantitative.

**CHEM 366W-3 Physical Chemistry Laboratory I**

Experiments in thermodynamics, chemical kinetics, electrochemistry, and atomic and molecular structure. Prerequisite: CHEM 260. Corequisite: CHEM 360. Writing/Quantitative.

**CHEM 367-2 Physical Chemistry Laboratory II**

Continues CHEM 366. Prerequisite: CHEM 366. Quantitative.

**CHEM 371-3 Chemistry of the Aqueous Environment**

An introduction to chemical processes in the aqueous environment. Quantitative treatment of the variables determining the composition of natural systems. Chemistry of aqueous toxic agents, wastewater treatment, and related matters. Prerequisite: CHEM 281 (or 150) and CHEM 360 (or 261). Quantitative.

**CHEM 372-3 Chemistry of the Atmospheric Environment**

Quantitative treatment of chemical and physical processes in the atmospheric environment. Chemistry of the troposphere including air pollution and climate change. Chemistry of the stratosphere including ozone depletion. Environmental radioactivity. Current topics. Prerequisite: CHEM 281 (or 150) and CHEM 360 (or 261). Quantitative.

**CHEM 380-4 Chemical and Instrumental Methods of Identification of Organic Compounds**

Basic principles of infrared, ultraviolet, nuclear magnetic resonance and mass spectroscopy as applied to the identification of organic compounds. Prerequisite: CHEM 260 and 282 and 286 (or 250 and 255), or permission of the department.

**CHEM 381-4 Intermediate Organic Chemistry**

An intermediate level course in modern organic chemistry, including both theoretical design of synthetic routes and practical training in the laboratory. The central topics to be discussed include methods to form carbon-carbon bonds, use of organometallic reagents, asymmetric synthesis, pericyclic reactions, the use of enzymes in organic synthesis, and the automation of synthetic organic chemistry. Prerequisite: CHEM 380. Quantitative.

**CHEM 406-3 Practicum III**

This is the third term of work experience in the Chemistry Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: CHEM 307 and completion of 56 units toward a BSc degree. Minimum CGPA of 2.67 (or permission of co-op co-ordinator).

**CHEM 407-3 Practicum IV**

This is the last term of work experience in the Chemistry Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: CHEM 406. Minimum CGPA of 2.67 (or permission of co-op co-ordinator).

**CHEM 408-3 Practicum V**

Optional term of work experience in the Chemistry Co-operative Education Program. Units for this course do not count towards the units required for an SFU degree. Prerequisite: CHEM 407.

**CHEM 419-3 Special Topics in Analytical Chemistry**

Principles and applications of emerging techniques in analytical chemistry. Prerequisite: CHEM 316.

**CHEM 432-3 Organometallic Chemistry**

The organometallic chemistry of the transition elements; the synthesis, characterization and catalytic behavior of organometallic compounds. Prerequisite: CHEM 332. Quantitative.

**CHEM 439-3 Special Topics in Inorganic Chemistry**

An in-depth treatment of a current topic in inorganic chemistry. Contact the department for information regarding the topic to be covered in a given term. Prerequisite: CHEM 332

**CHEM 440-3 Solid State Materials Chemistry**

The study of the detailed chemistry of solid state inorganic materials in terms of crystal structures, bonding, preparative methods, analytical and characterization techniques, mixed valence states, solid solutions, defects and non-stoichiometry, molecular mechanisms of the optical, electronic, ionic, magnetic and dielectric properties, and materials applications in advanced technology. Prerequisite: CHEM 340. Quantitative.

**CHEM 442-3 Polymeric Materials Chemistry**

The course covers the detailed chemistry of polymers, including polymer structure, studies of polymer solutions, molecular weight determination, and the synthesis of polymers. In addition, topics of current interest in polymer science will be discussed. Prerequisite: CHEM 282. Quantitative.

**CHEM 444-3 Organic Materials Chemistry**

Emphasis will be placed on the synthesis and properties of materials that are useful in the design of electrooptical devices, such as light emitting diodes (LEDs) and liquid crystal displays (LCDs). Topics to

be discussed will include liquid crystals, conjugated polymers, and the assembly of thin film materials. A case study approach will be employed in order to provide an overview of these areas of research, with examples taken from the primary literature. Prerequisite: CHEM 282. Quantitative.

**CHEM 450-3 Physical Organic Chemistry**

A study of the structure, stereochemistry and conformation of molecules and their effect on the reactivity of organic molecules. The physical basis of organic chemistry. Prerequisite: CHEM 360 (or 261) and 380. Quantitative.

**CHEM 452-3 Bio-organic Chemistry**

An advanced treatment of the use of enzymes in organic synthesis, the use of stable and radioisotopes in the study of enzymatic processes and the design of enzyme inhibitors. Prerequisite: CHEM 381 or permission of the department. Quantitative.

**CHEM 455-3 Synthetic Organic Chemistry**

This course teaches the principles involved in the planning and execution of the synthesis of organic molecules. Emphasis is on synthesis of naturally occurring compounds of biological importance. Prerequisite: CHEM 381 or permission of the instructor. Quantitative.

**CHEM 459-3 Special Topics in Organic Chemistry**

An advanced, in-depth treatment of a specialized area of organic chemistry. Prerequisite: CHEM 380 or permission of the instructor.

**CHEM 460-3 Advanced Physical Chemistry**

Statistical thermodynamics, kinetic theory of gases, transport properties, intermolecular forces, electrical properties of molecules, properties of ionic solutions, Debye-Hückel theory, electrochemistry. Prerequisite: MATH 251; CHEM 260 and 360, or PHYS 385 and 344 (or 244). Quantitative.

**CHEM 462-3 Molecular Spectroscopy**

Atomic spectra. Electronic, vibrational and rotational spectra of diatomic and polyatomic molecules. The Raman effect. Nuclear and electron spin resonance. Symmetry classification of molecules and their energy levels. Prerequisite: CHEM 260 or PHYS 385. Quantitative.

**CHEM 464-3 Quantum Chemistry**

Fundamentals of quantum mechanics and its principal results and techniques as applied to atoms and molecules: atomic structure, molecular bonding, rotations and vibrations of molecules, symmetry of atomic and molecular orbitals. Prerequisite: CHEM 260, MATH 232, 251; or PHYS 385. Recommended: MATH 310. Quantitative.

**CHEM 465-3 Electrochemistry**

Modern techniques and concepts in electrochemistry. Topics include equilibrium and dynamic electrochemistry, ion transport and voltammetry. Electrochemical systems of increasing importance including chemically modified electrodes, fuel cells and solar energy conversion applications will also be discussed. Prerequisite: CHEM 360. Quantitative.

**CHEM 469-3 Special Topics in Physical Chemistry**

Selected topics of physical chemistry not regularly covered in the chemistry undergraduate course offerings. Topics may vary from year to year and may include (but are not limited to): chemical kinetics, electrochemistry, magnetic resonance, polymer chemistry, surface chemistry. Prerequisite: CHEM 260 and 360 (or 261 and 361) or permission of the instructor.

**CHEM 481-5 Undergraduate Research**

Experimental and/or theoretical research; preparation of a written report and oral presentation in research seminar format. Admission requires selection of a faculty supervisor and submission of a research

proposal. Prospective students must contact the chemistry advisor to register their interest in this course before the last day of classes of the previous term. The research proposal is due by the end of the examination period preceding the research term. Prerequisite: permission of the department; knowledge of chemistry at an advanced level. Normally taken after completion of 300 level course requirements.

#### **CHEM 482-3 Directed Study in Advanced Topics of Chemistry**

Directed reading in a topic chosen in consultation with a supervisor. Admission requires selection of a faculty supervisor and submission of a study topic to the department a least one month prior to the start of the term in which the course will be taken. Prerequisite: permission of the department. Normally taken during the fourth year of study.

#### **CHEM 483-5 Honors Research**

Experimental and/or theoretical research; preparation of a written report and oral presentation in research seminar format. Admission requires selection of a faculty supervisor and submission of a research proposal. Prospective students must contact the chemistry advisor to register their interest in this course before the last day of classes of the previous semester. The research proposal is due by the end of the examination period preceding the research term. Prerequisite: CHEM 481 and permission of the department. Credit for this course may only be applied to the honors chemistry program.

#### **CHEM 740-3 Solid State Materials Chemistry**

The study of the detailed chemistry of solid state inorganic materials in terms of crystal structures, bonding, preparative methods, analytical and characterization techniques, mixed valence states, solid solutions, defects and non-stoichiometry, molecular mechanisms of the optical, electronic, ionic, magnetic and dielectric properties, and materials applications in advanced technology.

#### **CHEM 742-3 Polymeric Materials**

The course covers the detailed chemistry of polymers, including polymer structure, studies of polymer solutions, molecular weight determination, and the synthesis of polymers. In addition, topics of current interest in polymer science will be discussed.

#### **CHEM 744-3 Organic Materials Chemistry**

This is an advanced level course in modern organic materials chemistry. Emphasis will be placed on the synthesis and properties of materials that are useful in the design of electrooptical devices, such as light emitting diodes (LEDs) and liquid crystal displays (LCDs). Topics to be discussed will include liquid crystals, conjugated polymers, and the assembly of thin film materials. A case study approach will be employed in order to provide an overview of these areas of research, with examples taken from the primary literature.

#### **CHEM 750-3 Physical Organic Chemistry**

An advanced treatment of mechanism and structure in organic chemistry and the use of physical methods as probes of structure, stereochemistry and conformation.

#### **CHEM 752-3 Bio-organic Chemistry**

An advanced treatment of the use of enzymes in organic synthesis, the use of stable and radio isotopes in the study of enzymatic processes, and the design of enzyme inhibitors.

#### **CHEM 754-3 Carbohydrate Chemistry**

A detailed treatment of the structure and reactions of monosaccharides, the use of carbohydrates as chiral templates in organic synthesis, advances in glycoside synthesis, the occurrence, chemistry, and conformational analysis of complex carbohydrates and their role in biological systems.

#### **CHEM 755-3 Synthetic Organic Chemistry**

An advanced treatment of strategy in organic synthesis. The principles and use of modern synthetic methodology.

#### **CHEM 759-3 Special Topics in Organic Chemistry**

An advanced treatment of specific topics related to the study of organic compounds. Topics which will be discussed will vary from one term to the next.

#### **CHEM 801-3 Student Seminar**

Discussion of recent literature in chemistry through student seminars.

#### **CHEM 819-3 Special Topics in Analytical Chemistry**

In-depth coverage of a particular area of analytical chemistry. Example subject areas include separation science, mass spectrometry, optical spectroscopy, electrochemistry, or surface science. Occasionally the subject matter of this course will be a survey of recent advances in the field.

#### **CHEM 832-3 Organometallic Chemistry**

An advanced treatment of the synthesis, structures, reactions and spectroscopic identification of inorganic compounds.

#### **CHEM 833-3 Recent Advances in Main Group Chemistry**

Important developments in main group chemistry in recent years will be examined in the context of the basic chemistry of the elements involved; not every element or group will necessarily be discussed.

#### **CHEM 839-3 Special Topics in Inorganic Chemistry**

An advanced, in-depth treatment of a specialized area of inorganic chemistry.

#### **CHEM 842-3 Special Topics in Radiochemistry**

Theory and practical techniques of the current uses of radioactive isotopes in systems of chemical interest.

#### **CHEM 863-3 Magnetic Resonance**

Principles, techniques and applications of NMR and ESR.

#### **CHEM 864-3 Quantum Chemistry**

Non-relativistic quantum mechanics. Atomic and molecular structure, perturbation theory, variation method.

#### **CHEM 865-3 Electrochemistry**

Modern techniques and concepts in electrochemistry. Topics include equilibrium and dynamic electrochemistry, ion transport and voltammetry. Electrochemical systems of increasing importance including chemically modified electrodes, fuel cells and solar energy conversion applications will also be discussed.

#### **CHEM 869-3 Special Topics in Physical Chemistry**

A specialized area of physical chemistry will be selected from a list of topics.

#### **CHEM 881-0 Co-op Practicum I**

First term of work experience for graduate students. Prerequisite: completion of MSc thesis including defence.

#### **CHEM 882-0 Co-op Practicum II**

Second term of work experience for graduate students. Prerequisite: completion of MSc thesis including defence.

#### **CHEM 898-6 MSc Thesis**

A thesis for the MSc degree may be written on a topic in either chemistry or chemical education. Students electing to write a thesis in chemical education, are required to complete satisfactorily 10 units of course work in the Faculty of Education in addition to the minimum chemistry degree requirements. The 10 units of course work in the Faculty of Education may not be used for credit towards the PhD degree in

Chemistry if the student transfers into the PhD program.

#### **CHEM 899-6 PhD Thesis**

### **Chinese CHIN**

### **Faculty of Arts and Social Sciences**

### **Department of Linguistics Language Training Institute**

#### **CHIN 100-3 Mandarin Chinese I**

Introduction to the study of Mandarin Chinese and to the development of basic oral and written skills for those with no background in Mandarin. Students will study phonetics, vocabulary, syntax, grammar and culture.

#### **CHIN 101-3 Mandarin Chinese II**

Continues to build on all four language skills acquired in CHIN 100. Prerequisite: CHIN 100 or equivalent.

#### **CHIN 151-3 Spoken Mandarin for Speakers of Other Chinese Dialects I**

Designed for speakers of a Chinese dialect other than Mandarin, e.g., Cantonese. Learners will come to the course with no ability in spoken Mandarin, but some command of Chinese reading and writing. By the end of CHIN 151, students will be able to use spoken Mandarin at a basic level. Prerequisite: no knowledge of spoken Mandarin; placement interview. Students who have taken CHIN 151 (Spoken Mandarin for Speakers of Other Chinese Dialects) may not take this course for further credit.

#### **CHIN 152-3 Spoken Mandarin for Speakers of Other Chinese Dialects II**

Designed for speakers of a Chinese dialect other than Mandarin, e.g., Cantonese. Learners will come to the course with novice level proficiency in spoken Mandarin and a good command of Chinese reading and writing. By the end of CHIN 152, students will have improved their pronunciation and aural comprehension of spoken Mandarin and have enhanced their conversational skills. Prerequisite: CHIN 151 or equivalent.

#### **CHIN 185-6 Intensive Mandarin Chinese in the China Field School**

This six week intensive language study course will be taken by all students enrolling in the China Field School. Upon arrival at the university in China, students will be assigned to two course sections at the appropriate level according to their language skills from beginners to upper intermediate in reading, writing, comprehension, conversation and grammar. For students wanting to continue their language studies at SFU after attending the field school, the Chinese language instructor will conduct a placement interview and assign the appropriate course level.

#### **CHIN 200-3 Mandarin Chinese III**

Continues to build on all four skills of the language acquired in CHIN 101/102, with special emphasis on improving the students' spoken facility in the language. Prerequisite: CHIN 100 and 101 or equivalent.

#### **CHIN 201-3 Mandarin Chinese IV**

Continues to build on all four skills of the language acquired in CHIN 200, with special emphasis on improving the students' spoken facility. Prerequisite: CHIN 200 or equivalent.

### **Cognitive Science COGS Faculty of Arts and Social Sciences**

#### **COGS 100-3 Exploring the Mind**

This course provides a basic integrative overview of how cognitive science aspires to integrate the

empirical findings, theories, and methods of psychology, neuroscience, linguistics, computing science and philosophy. Prerequisite: Open to all students. Students with credit for COGS 200 may not take COGS 100 for further credit. Breadth-Humanities/Social Sciences/Science.

### **COGS 200-3 Foundations in Cognitive Science**

An introduction to major empirical methods and theoretical frameworks for exploring the mind that examines some of the foundational debates that have fueled investigations over the past fifty years. Taking an interdisciplinary approach, the course illustrates how a convergence of ideas from psychology, philosophy, linguistics, and computer science has led to deep explanations of a range of cognitive science topics. Prerequisite: COGS 100. Students who have taken COGS 200 before 1998 may take this course for further credit.

### **COGS 300-3 Selected Topics in Cognitive Science**

An interdisciplinary exploration of recent work on some special topic in cognitive science (such as vision, reasoning, connectionism, etc.) Prerequisite: lower division cognitive science course requirements. Students with credit for COGS 400 may not take COGS 300 for further credit.

### **COGS 310-3 Consciousness**

Explores the topic of consciousness, often called "the last great mystery of science," focusing on current scientific theories and empirical investigations from philosophy, psychology, and neuroscience. Prerequisite: COGS 100 and 200 (or permission of the instructor).

### **COGS 370-3 Cognitive Science Practicum I**

First term of work experience in the Cognitive Science Co-operative Education Program. Students should apply to the Faculty of Arts co-operative education co-ordinator by the end of the third week of the term preceding the employment term. Units from this course do not count towards the units required for an SFU degree. Prerequisite: normally 30 units, including COGS 100 and four other courses in the Cognitive Science program, with a minimum CGPA of 2.75.

### **COGS 371-3 Cognitive Science Practicum II**

Second term of work experience in the Cognitive Science Co-operative Education Program. Students should apply to the Faculty of Arts co-operative education co-ordinator by the end of the third week of the term preceding the employment term. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of COGS 370 and 45 units with a minimum CGPA of 2.75.

### **COGS 470-3 Cognitive Science Practicum III**

Third term of work experience in the Cognitive Science Co-operative Education Program. Students should apply to the Faculty of Arts co-operative education co-ordinator by the end of the third week of the term preceding the employment term. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of COGS 371 and 60 units with a minimum CGPA of 2.75.

### **COGS 471-3 Cognitive Science Practicum IV**

Fourth term of work experience in the Cognitive Science Co-operative Education Program. Students should apply to the Faculty of Arts co-operative education co-ordinator by the end of the third week of the term preceding the employment term. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of COGS 470 and 75 units with a minimum CGPA of 2.75.

### **COGS 490-5 Honors Project I**

An in-depth investigation of a topic in Cognitive Science culminating in a critical literature review and the formulation of a research proposal. Prerequisite: approval of cognitive science steering committee after student has completed a cognitive science major and at least two courses specified under honors in the program calendar entry.

### **COGS 491-5 Honors Project II**

The research proposed in COGS 490 is executed, culminating in the completion of a substantive piece of research. Prerequisite: approval of Cognitive Science steering committee either when student has completed COGS 490 or when student is taking COGS 490.

## **Communication CMNS Faculty of Communication, Art and Technology**

### **CMNS 110-3 Introduction to Communication Studies**

An introduction to selected theories about human communication. This course is required for a major, honors or minor in communication. Breadth-Social Sciences.

### **CMNS 130-3 Explorations in Mass Communication**

An introduction to the role of mass communication (radio, television, telecommunications and the press) in Canadian society. This course is required for a major, honors or minor in communication.

### **CMNS 130W-3 Explorations in Mass Communication**

An introduction to the role of mass communication (radio, television, telecommunications and the press) in Canadian society. This course is required for a major, honors or minor in communication. Writing.

### **CMNS 200-3 Effective Communication**

Introduction to techniques and methods of communicating effectively in complex organizations; with the media, government, the public; in the work place, in local and international business and trade, etc. The challenge of working in meetings, doing research in teams, preparing analytic/technical reports and press statements, managing complex interactive communication processes will be addressed, with special reference to the role of culture, policy, and law, technical change, and potential conflict. Prerequisite: 25 units. Recommended: for communication co-op students.

### **CMNS 210-3 Media History**

An assessment of the social implications of developments in information technology from prehistory to the middle of the 20th century. Topics include: the origins of symbolic representation; the oral tradition; the significance of different systems of writing and numeration; the consequences of print; and the initial changes brought about by electronic media. Prerequisite: CMNS 110.

### **CMNS 220-3 Understanding Television**

This course examines television, both as a medium of communication and an element of culture. Prerequisite: CMNS 110 and 130.

### **CMNS 221-3 Media and Audiences**

An introduction to the study of popular culture and mass media, with a focus on the organization and role of audiences. Prerequisite: CMNS 110 and 130.

### **CMNS 223-3 Advertising as Social Communication**

An interdisciplinary examination of the significance of advertising as a social message system in our consumer society. The course proposes an analytical method for appreciating the changing styles and

functions of advertising in the 20th century.

Prerequisite: CMNS 110 and 130.

### **CMNS 223W-3 Advertising as Social Communication**

An interdisciplinary examination of the significance of advertising as a social message system in our consumer society. The course proposes an analytical method for appreciating the changing styles and functions of advertising in the 20th century. Prerequisite: CMNS 110 and 130. Writing.

### **CMNS 226-3 Digital Media Communication Techniques**

This course introduces students to a variety of digital media communication technologies and techniques, including image and sound capturing and manipulation, Internet-based publishing and research, digitizing, editing and archiving. Design and management tasks involved in communicating using digital media are also introduced, including strategic and research planning, data integrity management, file structuring and packaging, and work presentation. Prerequisite: CMNS 110 and 130. Recommended: CMNS 220.

### **CMNS 230-3 The Cultural Industries in Canada: Global Context**

What do we mean when we talk about the 'cultural industries' today? This course explores the business structure and economics of the cultural sectors, the regulatory and policy frameworks, and their social and cultural contexts. Students are encouraged to develop, compare and contrast at least two sectors from the audio, print or visual industries. While the primary focus is on the Canadian case, students will be encouraged to look at other countries. Overriding themes explore the following: relationships between public and private sectors; independent and commercial creators; rights of creators versus distributors; specialty and general media; indigenous and global contents. Prerequisite: CMNS 130.

### **CMNS 235-3 Introduction to Journalism in Canada**

An overview of journalism as a social, cultural and political institution in Canada. Topics include: themes of news; print and electronic journalism; journalism and politics; history of Canadian journalism; legal, technological, professional, corporate and ethical influences. Prerequisite: CMNS 130.

### **CMNS 240-3 The Political Economy of Communication**

Examination of the political and economic processes that have generated the policies and structures of mass media, telecommunications and related industries; the relationship between the dichotomies of state and market, citizen and consumer, capitalism and democracy, global and local, and sovereignty and globalization in media industries and policies; overview of influences on State and international policies towards the media. Prerequisite: CMNS 110 and 130.

### **CMNS 247-3 International Communication**

A survey and analysis of opportunities and constraints in the field of international communication. The course will consider perspectives from which to understand and address regional differences, universal patterns of communication in international relations, and in development co-operation. Comparative and contrastive examples will be drawn from communication practices current in the Asia-Pacific region. Prerequisite: CMNS 110 and 130.

### **CMNS 253-3 Introduction to Information Technology: The New Media**

An introduction to new communication/information technologies, seen as new media of communication: the technologies, their uses, and the social issues arising from them. Prerequisite: CMNS 110 or 130.

**CMNS 253W-3 Introduction to Information Technology: The New Media**

An introduction to new communication/information technologies, seen as new media of communication: the technologies, their uses, and the social issues arising from them. Prerequisite: CMNS 110 or 130. Writing.

**CMNS 258-3 Introduction to Electroacoustic Communication**

An introduction to the audio medium as a communication tool and to electroacoustic aspects of communication in general. Specific techniques of field recording, interviewing, editing, sound processing, multi-tracking, and basic digital studio techniques will be presented using the school's studio facilities.

**CMNS 259-3 Acoustic Dimensions of Communication I**

A course designed to develop the student's perception and understanding of sound and its behavior in the interpersonal, social, environmental, media and creative fields. The acoustic and psychoacoustic bases of sound will be introduced with special reference to acoustic design, the electroacoustic media, and sonic environments.

**CMNS 260-3 Empirical Communication Research Methods**

An introduction to empirical research methods in diverse traditions of communication enquiry. Some methods recognize communication as everyday interactions; others analyze communication as a process; still others blend traditional scientific empiricism with analytical and critical methods derived from the arts and humanities. Topics include: ethics, paradigms, conceptualizing and operationalizing research, sampling, interviews, surveys, unobtrusive observation, content analysis, and the role of statistics in communication research. Prerequisite: CMNS 110 or 130. Quantitative.

**CMNS 261-3 Documentary Research in Communication**

Media and communication studies often utilize historical, governmental and corporate records. The course introduces the techniques necessary to analyze the primary source documents. Topics include: ethics, documentary discourse analysis, Canadian and international documentary searches on NGOs, governments, corporations; writing of policy briefs. Prerequisite: CMNS 110 or 130.

**CMNS 262-3 Design and Method in Qualitative Communication Research**

Examination of a wide range of approaches to research in media and cultural studies, including a discussion of ethical issues. Topics may include: historical methods, field work methods, textual analysis, case studies. Prerequisite: CMNS 110 or 130. Students who have credit for CMNS 286 in Spring 2004 may not take CMNS 262 for further credit.

**CMNS 286-3 Selected Topics**

Analysis of a particular topic in the general area of communication. Prerequisite: CMNS 110 and 130.

**CMNS 287-3 Selected Topics**

Analysis of a particular topic in the general area of communication. Prerequisite: CMNS 110 and 130.

**CMNS 304-4 Communication in Everyday Life**

An introduction to context theory and media literacy. Films and documentaries are used as texts for the study of communication and popular culture. Prerequisite: 45 units including two of CMNS 220, 221, 223.

**CMNS 304W-4 Communication in Everyday Life**

An introduction to context theory and media literacy. Films and documentaries are used as texts for the study of communication and popular culture.

Prerequisite: 45 units including two of CMNS 220, 221, 223. Writing.

**CMNS 310-4 Media and Modernity**

An examination of the development of communication theory in western social thought from the eighteenth century to the early twentieth century. Discussion is focused around a series of debates about the changing nature of human communication in modernity with specific reference to the rise of modern mass media. Topics discussed include the so-called growth of mass society in modernity; the emergence of Marxism; the origins of modern linguistics; and the rise and reformation of behavioural approaches to communication research. Prerequisite: two of CMNS 210, 221, 240.

**CMNS 320-4 Children, Media and Culture**

The course examines the part played by communication media in children's lives by reviewing the debates and research in this field. Specific attention will be paid to the issues of violence, literacy, imagination, quality and marketing through an examination of the critical writing and advocacy movements which have arisen around the problem of children's media. Prerequisite: 60 units including two of CMNS 220, 221, 223, 226. Strongly recommended: CMNS 362 or 363.

**CMNS 321-4 Cultural Production of Popular Music**

Examination of the cultural production of popular music with emphasis on the relationship between the nature and strategies of popular music production and the patterns of its audience consumption. Prerequisite: CMNS 221.

**CMNS 322-4 Documentary Media**

Introduction to the history and theory of documentary film, focusing on a range of examples from the 1920's to the present. Explores the shifting definition of documentary and realism. Prerequisite: 60 units including CMNS 220; or FPA 135, 136 or 137. Students who have taken CMNS 386-4 (Special Topics) with the topic "Problems in Documentary", offered in Fall 03, Fall 05, and Spring 07 terms, may not take this course for further credit.

**CMNS 323-4 Cultural Dimensions in Advertising**

This course develops a critical overview of the contemporary debates about the consumer society. This exploration of consumer culture begins by examining recent characterizations of the psycho-social dynamics of consumption in consumer culture. It goes on to trace the historical formation of advertising as a key cultural practice, mediating the market transactions between producers and consumers. The marketing communication model is the focus of a detailed examination of the increasingly sophisticated co-ordination of communication and consumer research activities. Prerequisite: 60 units, including two of CMNS 220, 221, 223 or 226. Strongly recommended: CMNS 362 or 363.

**CMNS 323W-4 Cultural Dimensions in Advertising**

This course develops a critical overview of the contemporary debates about the consumer society. This exploration of consumer culture begins by examining recent characterizations of the psycho-social dynamics of consumption in consumer culture. It goes on to trace the historical formation of advertising as a key cultural practice, mediating the market transactions between producers and consumers. The marketing communication model is the focus of a detailed examination of the increasingly sophisticated co-ordination of communication and consumer research activities. Prerequisite: 60 units, including two of CMNS 220, 221, 223 or 226. Strongly recommended: CMNS 362 or 363. Writing.

**CMNS 324-4 Media, Sports and Popular Culture**

An examination of the changing relationships between media, sport and popular culture in both a North American and a global context. Prerequisite: two of CMNS 210, 220, 221, 223, 240. Cannot be taken for further credit if student has taken CMNS 386 under same title.

**CMNS 325-4 Visualization and Visual Culture in Communication**

Investigates both theories and techniques of visualization design, visual culture, and visual communication. Themes covered in the course include: theories of visualization in relation to communication studies; methodologies for studying the interplay of technology, culture and media in visual studies and visual communication design; analysis of imaging conventions and innovations in the context of contemporary global communication; and visual communication in diverse cultural contexts. This is a laboratory-based course, requiring the completion of practical assignments that apply the ideas and theories presented in lectures and readings. Prerequisite: 60 units including two CMNS, IAT or FPA upper division courses. Students who have taken CMNS 387-4 offered with subtitle "Visualization" may not take this course for further credit.

**CMNS 326-4 Applied Media Workshop: On the Hill**

This course provides an opportunity for students to build on the knowledge they have acquired in Digital Media Communication Techniques (CMNS 226), and apply that knowledge to the production of the School of Communication's web based news magazine and documentary program On The Hill ([www.sfu.ca/oth](http://www.sfu.ca/oth)). Students will draw on their understanding of public communication in democracies and media analysis skills to create new and innovative visual and aural journalism. In addition, students will learn to build teamwork skills as they produce segments for the shows in groups. The course seminars will emphasize communication design, and the social and ethical issues which arise when working with documentary and news material for public dissemination. Prerequisite: permission of instructor, and 60 units including CMNS 226 and 235.

**CMNS 331-4 News Discourse and Political Communication**

An examination of journalism and the news media as a set of institutions with important political and ideological roles. The course overviews theoretical perspectives and applies selected theoretical concepts to such topics as influences on media content, how news generates meaning, ideological aspects of media frames, and the evaluation of journalism's performance in relation to normative expectations of democratic political communication. Prerequisite: two of CMNS 230, 235 and 240.

**CMNS 332-4 Communication and Rhetoric**

An examination of rhetoric and persuasion in the context of communication studies. Several classical accounts of persuasion and rhetoric are examined in order to develop a fuller understanding of the promotional ethos of the modern age. How different institutional modes of persuasive discourse have been shaped by a variety of research agendas and underlying theories about human nature is also studied. Prerequisite: 60 units including two of CMNS 220, 221, or 223. Cannot repeat this course for credit if taken as CMNS 286-3 in 2003-4.

**CMNS 333-4 Broadcast Policy and Regulation in the Global Context**

Television, in broadcast, cable and video-on-demand formats, has dominated the cultural industries of Canada. Traditionally seen as important to political and cultural self-determination, broadcasting strategy,

business and government policies are now being adapted in view of globalization of technologies which are altering the production, financing, and distribution of new and existing information and entertainment services. This course focuses on developing applied business and public policy analytic skills. Tools of on-line searches, presentation software, the rudiments of strategic analysis of industrial sectors (strengths, weaknesses, threats, opportunities) and technical policy writing will be covered. A simulation will be staged around a convergence theme drawn from technology, business, or public interest policy issues. Prerequisite: CMNS 240 and 261. Recommended: CMNS 230.

#### **CMNS 334-4 Cultural Policy**

Examination of the modern foundations and current policy processes of federal, provincial and municipal policies for the arts, cultural industries and heritage. Related social policies, such as bilingualism and multiculturalism, and the international context of Canadian cultural policy, will also be addressed. Prerequisite: CMNS 261 and one of CMNS 230 or 240.

#### **CMNS 336-4 Telecommunication Regulation in North America**

Development of the theory and practice of regulation of the telecommunications industry in Canada and the USA. Prerequisites: CMNS 240 and 261. Recommended: CMNS 230. Students who have taken CMNS 436 in the past may not take this course for further credit.

#### **CMNS 342-4 Science and Public Policy: Risk Communication**

The course examines communication in the relation between science (technology) and public policy, and more particularly, in the evaluation of risk. Prerequisite: Two of CMNS 260, 261, 262.

#### **CMNS 346-4 Communication and Development**

An introduction to explanations and interpretations of the roles of communication in development, and the historical framework through which such analysis is made. It shows how an unequal structure of world political economy is conserved in association with ever increasing amounts of information and new means to communicate. Examples from Canada and other countries will be used. Prerequisite: 60 units including CMNS 110 and 130. Recommended: CMNS 240. Students who have taken CMNS 345 may not take CMNS 346 for further credit.

#### **CMNS 347-4 Communication in Conflict and Intervention**

The role of communication, and in particular the mass media, in various types of conflict and the uses of communication-based strategies in the intervention, arbitration and mediation of those conflicts. Prerequisite: 60 units including CMNS 110 and 130. Recommended: CMNS 247 and 362.

#### **CMNS 348-4 Globalization and Media**

Examines the dynamic global transformations in media, including print, broadcast, film, and digital media in a broad international and comparative context. Investigates globalization as a critical concept and considers media in the long history of globalization. Focuses on political, cultural, and technological issues addressed by media and globalization at the turn of the 21st Century. Prerequisite: 60 units including at least two of CMNS 210, 220, 221, 223, 230, 235, 240 or 253. Students who have taken CMNS 387 with the subtitle "Globalization and Media" may not take this course for further credit.

#### **CMNS 353-4 Social Contexts of Information Technology**

Examination of a particular application of information/communication technology, focussing on the technology itself and its capabilities; how it is

implemented, and what social impacts it has on the people who use it. Emphasis is placed on understanding how the system works in the ongoing social context in which it is developed, installed and used. The specific application studied may vary from term to term. Prerequisite: CMNS 253; and CMNS 261 or 362.

#### **CMNS 354-4 Communication and Social Issues in Design**

This course will explore social issues and values in designing technology, through a focus on both the objects and processes of design. Emphasis will be placed on communication between participants in the design process, and identification of social issues and values that influence design. Students will work in cross-disciplinary groups during labs. Lab exercises will emphasize making decisions that occur during the design process explicit, and making values that enter into design processes explicit. Prerequisite: 60 units, including any one of CMNS 253; CMPT 275; KIN 201, 205 or ENSC 100. CMNS students must also have completed CMNS 362 or 363.

#### **CMNS 358-4 Sound Recording: Theory and Design**

An intermediate level studio workshop to develop the student's skills in sound production with an understanding of the communicational implications of sound design. Audio theory and its applications in both the digital and analogue formats will be presented, along with practical studio techniques for stereo and multi-channel sound production. Prerequisite: CMNS 258 with a grade of B or higher, and approval of instructor.

#### **CMNS 359-4 Acoustic Dimensions of Communication II**

A special topics course and small class work group at an intermediate level in acoustic communication dealing intensively with specific problems in psychoacoustics, acoustic design, soundscape studies, noise in the community, acoustic aspects of social organization, the acoustic aspects, language and interpersonal communication, electronic sound production, media analysis, theories of sound cognition, and information processing. Prerequisite: CMNS 259.

#### **CMNS 362-6 Evaluation Methods for Applied Communication Research**

Research design and techniques for the study of the introduction, uses and consequences of new media and technologies, new communication policies and practices in their socio-economic and cultural context, and communication in innovation and change. Prerequisite: at least 60 units, including two of CMNS 253, 260 or 261.

#### **CMNS 363-6 Approaches to Media and Audience Research**

A survey and application of research approaches to media and audience analysis including content analysis, textual analysis, agenda setting, effects research, focus group and survey research, message evaluation and audience studies. Prerequisite: at least 60 units, including one of CMNS 220, 221 or 223, and CMNS 260. Quantitative.

#### **CMNS 371-4 The Structure of the Book Publishing Industry in Canada**

An analysis of the various facets of the book publishing industry in Canada including ownership patterns, legal foundations, criteria for book selection and marketing. Includes examination of both commercial and educational publishing. The industry will be analysed within the framework of Canadian cultural and other government policies affecting the industry. Prerequisite: 60 units, including CMNS 110 and 130.

#### **CMNS 372-4 The Publishing Process**

Students will follow the book-publishing process from the acquisition and editing of manuscripts through to production, promotion and distribution. Each topic proceeds from basic concepts and precepts to case studies of particular kinds of publishing companies (e.g., literary, regional and general trade) and particular types of books (e.g., children's, genre, fiction and poetry). The publishing decision-to-publish process is simulated. Required readings focus on the history of book publishing, as well as on current developments. Prerequisite: 60 units, including CMNS 110 and 130.

#### **CMNS 375-4 Magazine Publishing**

This course addresses the basic concepts and practices used in the magazine publishing industry in the areas of business, writing, editing, design, marketing, advertising, distribution, and production. It emphasizes readership and editorial policy, new technology and changing costs and revenue patterns. Prerequisite: 60 units.

#### **CMNS 386-4 Special Topics in Communication**

Intensive analysis of a particular topic in the general area of communication. Prerequisite: depends on topic, published before enrolment.

#### **CMNS 387-4 Special Topics in Communication**

Intensive analysis of a particular topic in the general area of communication. Prerequisite: depends on topic, published before enrolment.

#### **CMNS 388-4 Special Topics in Communication**

Intensive analysis of a particular topic in the general area of communication. Prerequisite: depends on topic; published before enrolment.

#### **CMNS 395-3 Communication Practicum I**

First term of work experience in the School of Communication's Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: students must complete Bridging Online (visit [www.sfu.ca/coop/bol](http://www.sfu.ca/coop/bol) for further details) at least two terms before their anticipated co-op placement. Students must then enrol with the co-op program by the second week of the term preceding the work term of application, and have a minimum GPA of 2.70. Graded as pass/fail (P/F).

#### **CMNS 396-3 Communication Practicum II**

The second term of work experience in the School of Communication Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: CMNS 395. Graded as pass/fail (P/F).

#### **CMNS 408-4 Communication Network Project Group**

An advanced workshop in network analysis focussed on applied research. Prerequisite: two upper division CMNS courses and permission of the instructor.

#### **CMNS 410-4 Media and Ideology**

An advanced seminar in media studies focussing upon theoretical debates about the allegedly ideological character of mass media and mass culture. Prerequisite: 75 units, including CMNS 310. Recommended: CMNS 331 and SA 327. Students who have taken CMNS 422 may not take this course for further credit.

#### **CMNS 423-4 Globalization: Cultural Issues**

Explores the cultural dimension of global flows of capital and data, comparing, on the one hand, the consequences of increased mobility and, on the other hand, the drive towards increased control and immobility of displaced populations. Examines how the tightening of national boundaries and economic and political processes of globalization have left populations "placeless" whether because of war, environmental disaster, etc. Looks at the ways in which these groups make sense of their displacement and immobility through narratives, stories and

images, focusing on issues of power and the destruction of social life. Prerequisite: 75 units including CMNS 221 or 223; and two CMNS upper division courses; and CGPA of 3.00 or higher. Students who have taken CMNS 487 in terms 1051, 1057 and 1081 cannot take this course for further credit.

**CMNS 424-4 Colonialism, Culture and Identity**  
Examines why identity is such an important issue for contemporary diasporic communities and former colonies. Introduces students to critiques of representations that construct "racialized" groups as inferior, primitive threats to civilization and their constitution of passive, disciplined subjects. Primarily focuses on innovative cultural strategies developed in Indigenous People, the Black diaspora, Asian/Canadian communities and survivors of the Jewish Holocaust to create ethical communities and critique the impact of colonial violence on contemporary societies. Prerequisite: 75 units including CMNS 221 or 223; and two CMNS upper division courses; and CGPA of 3.00 or higher. Students who have taken CMNS 487 in terms 1037, 1047 and 1067 cannot take this course for further credit.

**CMNS 425-4 Applied Communication for Social Issues**  
An advanced seminar in applied communication that focuses on the research and strategic design of media messages, campaigns and programs for public awareness, education, and social change. This course involves the application of theories and approaches in critical media analysis to the tasks of media design and media use for public understanding, engagement and participation around social issues. Prerequisite: 75 units, including CMNS 221 and one of CMNS 260, 261 or 262.

**CMNS 426-4 Video Design for Social Communication**  
The workshop examines the growing role that video is playing in a variety of public relations, industrial, advocacy and educational contexts. The emphasis of this course is on issues of communication design in relation to the goals and values in specific communication forums. Prerequisite: 75 units, including CMNS 226 and two of CMNS 220, 326, 358.

**CMNS 428-4 Media Analysis Project Group**  
An advanced workshop in media analysis focussed on applied research. Prerequisite: two upper division CMNS courses and permission of instructor.

**CMNS 431-4 News Research and Analysis**  
Applied research seminar using techniques of textual and contextual analysis to test media themes and explore patterns of coverage and omission in Canada's new media. Students also have an opportunity to publicize their work through the NewsWatch Canada Project. Prerequisite: instructor's permission, normally granted on the basis of a CGPA of at least 3.0, and 75 units, including at least one of CMNS 235, 331 or 335, and at least one of CMNS 261 or 363.

**CMNS 432-4 Opinion, Propaganda and Political Communication**  
Explores the general relationship between mediated politics and political media. The interaction of political marketing, persuasion and political advertising during and between elections is examined. Prerequisite: 75 units including at least two CMNS or DIAL upper division courses. Cannot receive credit for this course if taken as CMNS 486-4 in Summer 2004-2005.

**CMNS 433-4 Issues in Communication and Cultural Policy**  
Advanced seminar on current issues in communication policy. Topics will be selected from among current policy issues in local, national and international aspects of broadcasting, the cultural

industries, the arts and heritage. Prerequisite: 75 units including CMNS 333 or 334.

**CMNS 435-4 Information Rights in the Information Age**  
An advanced seminar to examine key information policy issues and the actors involved in setting policy (governments, information industry, news media, libraries, citizen groups) in Canada, with international comparisons. Prerequisite: 75 units, including CMNS 261 and one of CMNS 240, 333, 334 or 353.

**CMNS 437-4 Media Democratization: From Critique to Transformation**  
An advanced seminar on the normative debates, social bases, and strategic potential for media democratization in the context of economically developed liberal democracies like Canada and the United States. This course complements other courses which critically examine state communication policies and the political economy and allegedly ideological character of corporate media. Here, we focus on campaigns and movements in civil society to define and build alternative communicative forms based on equality, democratic participation and/or human rights. Prerequisite: 75 units, including CMNS 235, 240 or 331. Cannot be taken for further credit if student has taken CMNS 428 or 487 under the same title.

**CMNS 438-4 Communication Policy Project Group**  
An advanced workshop in communication policy in media and information technology focussed on applied research. Prerequisite: two upper division CMNS courses and permission of the instructor.

**CMNS 443-4 Comparative Asian Media Systems**  
Offers a basis for understanding different Asia media systems in concrete historical, political and socio-economic contexts. Introduces students to a range of epistemological and theoretical issues in media systems in a vast and extremely diverse region that is undergoing a period of rapid political, economic, social and cultural transformation. Provides an overview of issues relating to different media systems and case studies of media and politics in specific countries in the region. Prerequisite: 75 units including one of CMNS 230 or 240, and one of CMNS 261 or 262.

**CMNS 444-4 Political Economy of International Communication**  
An examination of the domestic and international implications of the development of mass media and telecommunications and the differential impact of the free flow of technology and information. Prerequisite: 75 units, including CMNS 240, and 261 or 262.

**CMNS 445-4 Media and Popular Culture in China**  
An exploration of the media and popular culture scene in reform-era China. A wide range of media and popular culture forms and practice (including films, television shows, lifestyle magazines, street tabloids, and popular rhymes) are analysed in their concrete institutional settings and dynamic relationships with official ideologies, market imperatives, and the everyday struggles and cultural sensitivities of various social groups during a period of epochal transformation in China. Prerequisite: 75 units including CMNS 240, and 261 or 262; and one of CMNS 310, 331, 345, or 346. Students who have taken CMNS 428, 486 or 487 with this topic may not take CMNS 445 for further credit.

**CMNS 446-4 The Communication of Science and the Transfer Of Technology**  
Evaluation of the communication of scientific knowledge and the transfer of technology, both within industrialized settings and to non-industrialized settings. Specific reference to the communication of

values related to the use of technologies and the role of science and technology in international development. Prerequisite: 75 units, including CMNS 345 or 346, and one of CMNS 260, 261 or 262. Recommended: CMNS 253 and 362.

**CMNS 447-4 Negotiation and Dialogue as Communication**  
This course provides frameworks and tools with which to understand and evaluate negotiation and evaluate negotiation as a form of communication. The objective of the course is to provide an understanding of the role of communication in the negotiating process, and the consequences of different kinds of negotiation strategies in intercultural, international, competitive, and conflictual situations. It combines theoretical discussion with practical case studies, involves guest negotiators and analysts, and provides an appreciation of the world-wide scale and importance of negotiation as a basis for clarifying relationships. Prerequisite: 75 units including one of CMNS 347, DIAL 390, DIAL 391 or DIAL 392. Strongly recommended: CMNS 362.

**CMNS 448-4 International Communication Project Group**  
An advanced workshop in international communication and development focussed on applied research. Prerequisite: two upper division CMNS courses and permission of the instructor.

**CMNS 452-4 Race and the Media**  
Examines the contemporary construction and maintenance of race and ethnicity, through movies, music, and the Internet. Provides grounding in scholarship on media, race, ethnicity, and identity. Explores the historical role of entertainment in racialization. Investigates contemporary issues and forms of media and race. Prerequisite: 75 units including one of CMNS 220, 221, 223 or 262, and at least two CMNS upper division courses. Students who have taken CMNS 486 with subtitle "Race and the Media" cannot take this course for further credit.

**CMNS 453-4 Issues in the Information Society**  
Advanced seminar to discuss issues in the interplay between contemporary society and new computer/communication technologies, at the level of comprehensive theories of society, on one hand, and major public policy, on the other. Prerequisite: 75 units, including CMNS 353 and 362.

**CMNS 454-4 Computer Mediated Work and Workplace Communication**  
An investigation of the content, quality and character of jobs and workplace communication systems that involve computers. An examination of the influence of managerial goals and workplace relations on the design and choice of hardware and software for: office automation; computer-aided and computer-integrated manufacturing systems; computer-aided design, expert systems, and electronic networks. Prerequisite: 75 units including CMNS 253. Recommended: CMNS 353 and 362.

**CMNS 455-4 Women and New Information Technologies**  
In the 1970s, technological change came under the scrutiny of a wide range of interest groups. Research concerned with women and technological change documented that women were affected differently by technology than men, and that, in general, women occupy different positions in the technological change process than men. As interest in women and technological change has grown in the past 25 years, the benefits of focusing on gender as a variable of study have extended beyond making women's experiences visible. Focusing on gender offers the possibility of discovering theoretical limitations which, when addressed, have implications that extend beyond the interests of women. Prerequisite: 75 units, including any one of CMNS 253, 353, or 453; CMPT 320; WS 204.

**CMNS 456-4 Communication to Mitigate Disasters**

An examination of the special role communication and information systems play in efforts to mitigate effects of major emergencies and disasters. Topics include: Canadian and international disaster management programs, practices and issues; principles of emergency communication planning and operation, and the application and influence of new communication and information technologies (including electronic networks) in hazard information gathering, interpretation, exchange and management. Prerequisite: 75 units, including two of CMNS 230, 240, 253, and 353.

**CMNS 458-4 Information Technology Project Group**

An advanced workshop in applied information technology and its evaluation focussed on applied research. Prerequisite: two upper division CMNS courses and permission of instructor.

**CMNS 460-4 Seminar in Dialogue and Public Issues**

Focuses on the practical tools and conceptual approaches used in dialogue, with comparisons of the role and impact of dialogue among community, government, corporate, union, First Nations, legal-regulatory, advocacy groups and organizations. Emphasis is on interaction among interest groups and stakeholders, cultures of negotiation and decision-making, techniques of facilitation, and strategies for effective outcomes. Prerequisite: 75 units including either at least two of CMNS 332, 347, 425, 432, 437, 447 or DIAL 390, 391, 392.

**CMNS 461-3 Field Placement in Dialogue**

Students work under faculty supervision in a placement where dialogue is planned or where dialogue occurs. Arrangements are the responsibility of the student, and enrolment is limited. Prerequisite: 75 units including CMNS/DIAL 460, and permission of instructor.

**CMNS 472-4 Books, Markets and Readers**

Application of marketing concepts to the area of book publishing. The concepts and skills learned will help to differentiate book categories and markets, and to create a marketing strategy for a book or a literary launch. The course will also discuss reading trends and the effect of market conditions on publishing. Prerequisite: 75 units including CMNS 372.

**CMNS 473-4 Publication Design and Print Production**

An examination of theory, principles and applications in publication design and print production including computer applications. The course focuses on magazines, books and electronic formats. Creative, marketing and managerial issues will all be explored. Prerequisite: 75 units.

**CMNS 474-4 The Business of Publishing**

This course examines business practices within publishing firms. It emphasizes financial planning and operations, acquisitions, marketing and promotion. Prerequisite: 75 units including CMNS 372.

**CMNS 478-4 Publishing Project Group**

An advanced workshop in publishing analysis or design focussed on applied research. Prerequisite: two upper division CMNS courses and permission of the instructor.

**CMNS 479-1 Directed Study**

Independent research and reading on topics selected in consultation with the supervising instructor. Prerequisite: two upper division CMNS courses and consent of instructor. No more than ten units of Directed Study may be taken.

**CMNS 480-2 Directed Study**

Independent reading and research on topics selected in consultation with the supervising instructor. Prerequisite: two upper division CMNS courses and

consent of instructor. No more than 10 units of directed study may be taken.

**CMNS 481-3 Directed Study**

Independent reading and research on topics selected in consultation with the supervising instructor. Prerequisite: two upper division CMNS courses and consent of instructor. No more than 10 units of directed study may be taken.

**CMNS 482-4 Directed Study**

Independent reading and research on topics selected in consultation with the supervising instructor. Prerequisite: two upper division CMNS courses and consent of instructor. No more than 10 units of directed study may be taken.

**CMNS 483-5 Directed Study**

Independent reading and research on topics selected in consultation with the supervising instructor. Prerequisite: two upper division CMNS courses and consent of instructor. No more than 10 units of directed study may be taken.

**CMNS 486-4 Special Topics in Communication**

Intensive analysis of a particular topic in the general area of communication and/or attention to the work of a particular writer or school of thought. Prerequisite: depends on topic; published before enrolment.

**CMNS 487-4 Special Topics in Communication**

Intensive analysis of a particular topic in communication and/or attention to the work of a particular writer or school of thought. Prerequisite: depends on topic; published before enrolment.

**CMNS 488-4 Selected Topics in Communication**

Intensive analysis of a particular topic in the general area of communication. Prerequisite: depends on topic; published before enrolment.

**CMNS 489-4 Field Placement in Communication**

For students who have at least 24 upper level units in communication, this course offers the opportunity to work under faculty supervision in a field placement situation related to one of the areas of concentration in communication. Arrangements for field placement and faculty supervision are the responsibility of the student, and enrolment will depend upon the availability of faculty resources in any semester. Prerequisite: 75 units and permission of the school.

**CMNS 494-3 Communication Practicum III**

The third term of work experience for students in the School of Communication Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: CMNS 396. Graded as pass/fail (P/F).

**CMNS 495-3 Communication Practicum IV**

The fourth term of work experience for students in the School of Communication Co-operative Education Program. Units from this course do not count towards the Units required for an SFU degree. Prerequisite: CMNS 494. Graded as pass/fail (P/F).

**CMNS 496-3 Communication Practicum V**

An optional fifth term of work experience for students in the School of Communication Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: CMNS 495. Graded as pass/fail (P/F).

**CMNS 497-5 Honors Research Proposal**

Preparation for honors research project, including literature review, ethics approval (if necessary), and presentation of work in progress at end of term. Prerequisite: students accepted into honors program only.

**CMNS 498-10 Honors Research Project**

Intensive work in a particular topic in the general field of communication. Involves an extensive individual research project under the direct supervision of at least two committee members (at least one of whom

is a CMNS faculty member) who will provide guidance and critical feedback as necessary. Presentation of completed project at end of term. Prerequisite: successful completion of CMNS 497.

**CMNS 800-5 Contemporary Approaches in Communication Studies**

This course surveys current interdisciplinary perspectives in communication studies and theory. It is normally offered in the fall term, and expected in the first year of graduate study.

**CMNS 801-5 Design and Methodology in Communication Research**

A survey course which examines the problems, methods and theoretical assumptions in communication research using case studies of research design and methods. Students may design a research project and conduct a small pilot study in a selected area. Normally offered in the spring term and expected in the first year of graduate study.

**CMNS 802-5 History of Communication Theory**

A survey of classic works, issues and debates in communication theory.

**CMNS 804-5 Seminar in Advanced Communication Theory****CMNS 805-5 Communication Research Methods and Techniques**

Survey of research methodology and techniques used in empirical communication studies. Includes research design, measurement, and the use of the computer in evaluation.

**CMNS 815-5 Social Construction of Communication Technologies**

A study of the social theory of information technologies, examining issues affecting computer-mediated communication.

**CMNS 824-5 Colonialism, Culture and Identity**

A study of colonialism, culture, and identity with a focus on the strategies used by diasporic communities and (neo)colonial subjects to address the impact of colonial violence as well as create ethical communities. Historical and contemporary case studies will be examined. Students who took CMNS 855 in Term 1071 may not take this course for further credit.

**CMNS 830-5 Popular Culture and Media Theory**

Examines recent debates in popular culture and media theory, including post-modernism, hegemony, resistance and culture at the margin.

**CMNS 840-5 Political Economy of Communications**

A study of the political, economic and social process that produces the structure and policies of mass media, and of telecommunication agencies in their historical setting.

**CMNS 845-5 Communication and Development**

A study of communication in development, with a special emphasis on the confrontation of knowledge systems, and their expertise; international organizations and social justice; the roles of science and technology in development; the process of globalization; media and environmental sustainability.

**CMNS 850-5 Directed Readings and Research**

Pursuance of particular areas of interest related to a student's program.

**CMNS 851-5 Directed Studies**

Pursuance of interest in specific areas, including field studies related to the student's program. May include work and study in supervised professional settings.

**CMNS 855-5 Selected Topics in Communication Studies**

Specialized one-time graduate course offerings on topics related to the current research of school faculty or visiting professors.



**CMNS 856-5 Graduate Seminar**

Advanced work in an area of specialization. Review and evaluation of research in progress.

**CMNS 857-5 Selected Topics in Communication Studies**

Specialized graduate course offering on a topic related to the current research of school faculty or visiting professor.

**CMNS 858-5 Selected Topics in Communication Studies**

Specialized graduate course offering on a topic related to the current research of school faculty or visiting professor.

**CMNS 859-5 Acoustic Dimensions of Communications**

Special topics in sound and communication studies with emphasis on specific problems in psycho-acoustics, theories of sound cognition and information processing, soundscape studies, acoustic design, community noise surveys, media analysis and related technology. Students will gain experience in designing and conducting research projects in one of these areas. Prerequisite: CMNS 359 or equivalent.

**CMNS 860-2 Graduate Colloquium**

Discussion of essentials of researching, writing, and defending a thesis. Presentation by students of thesis related research plans or results, thesis architecture, of finished chapters for critical review by faculty and students. MA students must complete this course once before proceeding to a thesis defence. S/U standing only.

**CMNS 880-5 Directed Readings and Research**

Supervised enquiry in concentrated areas of specialization.

**CMNS 881-5 Research Internship**

Work and study in an approved professional setting.

**CMNS 882-5 Research Field Work**

External research beyond regular contact with the University.

**CMNS 891-0 Co-op Practicum I****CMNS 892-0 Co-op Practicum II****CMNS 895-6 Comprehensive Examination**

Examination of three areas of which one must be on the theoretical or methodological framework/procedures indicated by the proposed dissertation. S/U standing only. The exam may be retaken once in the event of unsatisfactory performance.

**CMNS 898-6 MA Thesis****CMNS 899-6 PhD Thesis****Computing Science CMPT  
Faculty of Applied Sciences****CMPT XX1-3 Computers and the Activity of People**

Concerned with computer literacy and appreciation. What are computers? What do they do? How do they do it? How will they affect us? Illustrations given of applications of computing in the arts, commerce, industry, science and everyday activity. Programming is introduced but not emphasized; instead, students will be exposed to a variety of computer hardware and software elements that are in wide use. No special prerequisite. Students with a grade of B or higher in BC high school computer science 12, or those who have obtained credit for or are currently enrolled in any other Computing Science course may not take CMPT 001 for further credit.

**CMPT 100-3 Software Packages and Programming**

Introduction to the fundamentals of computer operation and computer programming. The use of software packages is emphasized, focussing on spreadsheets, databases, and presentation graphics.

Techniques of solving problems using structured programs in a modern database programming environment are introduced. Prerequisite: BC mathematics 12 or MATH 100 or MATH 110. Students with credit for CMPT 101, 102, 103, 104, 120, 126 or 128 may not take CMPT 100 for further credit.

**CMPT 102-3 Introduction to Scientific Computer Programming**

A programming course which will provide the science student with a working knowledge of a scientific programming language and an introduction to computing concepts, structured programming, and modular design. The student will also gain knowledge in the use of programming environments including the use of numerical algorithm packages. Corequisite: MATH 152 or 155 (or 158). Students with credit for CMPT 101, 103 104, 120, 126 or 128 may not take CMPT 102 for further credit. Quantitative.

**CMPT 110-3 Programming in Visual Basic**

Topics will include user interfaces, objects, event-driven programming, program design, and file and data management. Prerequisite: BC mathematics 12 (or equivalent) or any 100 level MATH course. Students who have obtained credit for, or are currently enrolled in a computing science course at the 200 level or higher, or ITEC 240, 241 or 242 may not take CMPT 110 for further credit except with permission of the School of Computing Science. Quantitative.

**CMPT 118-3 Special Topics in Computer and Information Technology**

Special topics in computing science which are of current interest to non-computing students. The course will be offered from time to time depending on availability of faculty and on student interest. Students who have obtained credit for, or are currently enrolled in a computing science course at the 200 level or higher, may not take CMPT 118 for further credit.

**CMPT 120-3 Introduction to Computing Science and Programming I**

An elementary introduction to computing science and computer programming, suitable for students with little or no programming background. Students will learn fundamental concepts and terminology of computing science, acquire elementary skills for programming in a high-level language and be exposed to diverse fields within, and applications of computing science. Topics will include: pseudocode, data types and control structures, fundamental algorithms, computability and complexity, computer architecture, and history of computing science. Treatment is informal and programming is presented as a problem-solving tool. Students should consult with the self-evaluation on the School of Computing Science website to decide whether they should follow the CMPT 120/125 course sequence or enrol in CMPT 126. Prerequisite: BC Math 12 or equivalent is recommended. Students with credit for CMPT 101, 102, 103, 104, 125, 126, 128 or any course numbered CMPT 200 or higher may not take this course for further credit. Quantitative/Breadth-Science.

**CMPT 125-3 Introduction to Computing Science and Programming II**

A rigorous introduction to computing science and computer programming, suitable for students who already have some backgrounds in computing science and programming. Intended for students who will major in computing science or a related program. Topics include: fundamental algorithms; elements of empirical and theoretical algorithmics; abstract data types and elementary data structures; basic object-oriented programming and software design; computation and computability; specification and program correctness; and history of computing science. Prerequisite: BC MATH 12 (or equivalent) and CMPT 120. Students with credit for CMPT 101, 104, 126, 128 or any course numbered CMPT 200 or

higher may not take this course for further credit. Quantitative.

**CMPT 126-3 Introduction to Computing Science and Programming**

A rigorous introduction to computing science and computer programming, suitable for students who already have substantial programming background. This course provides a condensed version of the two-course sequence of CMPT 120/125, with the primary focus on computing science and object oriented programming. Topics include: fundamental algorithms and problem solving; abstract data types and elementary data structures; basic object-oriented programming and software design; elements of empirical and theoretical algorithmics; computation and computability; specification and program correctness; and history of computing science. Prerequisite: BC MATH 12 (or equivalent). Students should feel comfortable writing programs in a structured language. Students must consult with the self-evaluation on the Computing Science web site to decide whether they should follow the CMPT 120/125 course sequence or enroll in CMPT 126. Students with credit for CMPT 101, 104, 125, 128 or any course numbered CMPT 200 or higher may not take this course for further credit. Quantitative/Breadth-Science.

**CMPT 128-3 Introduction to Computing Science and Programming for Engineers**

An introduction to computing science and computer programming, suitable for students wishing to major in Engineering Science or a related program. This course introduces basic computing science concepts, and fundamentals of object oriented programming. Topics include: fundamental algorithms and problem solving; abstract data types and elementary data structures; basic object-oriented programming and software design; elements of empirical and theoretical algorithmics; computation and computability; specification and program correctness; and history of computing science. The course will use a programming language commonly used in Engineering Science. Prerequisite: BC MATH 12 (or equivalent). Students with credit for CMPT 101, 104, 125, 126 or any course numbered CMPT 200 or higher may not take this course for further credit. Quantitative/Breadth-Science.

**CMPT 150-3 Introduction to Computer Design**

Digital design concepts are presented in such a way that students will learn how basic logic blocks of a simple computer are designed. Topics covered include: basic Von Neumann computer architecture; an introduction to assembly language programming; combinational logic design; and sequential logic design. Students who have taken ENSC 150 or CMPT 290 cannot take this course for further credit. Prerequisite: Strongly recommended: MACM 101 and CMPT 120, or MACM 101 and substantial programming background. Quantitative.

**CMPT 165-3 Introduction to the Internet and the World Wide Web**

In this course, we shall examine the structure of the Internet and the World Wide Web as well as design and create web sites. Students who have obtained credit for, or are currently enrolled in a CMPT course at the 200 division or higher, CMPT 118 or 170, or IAT 265 or 267 may not take CMPT 165 for further credit. Breadth-Science.

**CMPT 170-3 Introduction to Web Application Development**

An introduction to the creation of web pages, as well as interactive websites. Students will learn how to create web pages using current best practices. Creation of web-based application using a modern web application framework. Prerequisite: CMPT 120 or 126 or 128. Enrolling in CMPT 125 concurrently is



highly recommended if CMPT 126 or 128 has not already been completed.

### **CMPT 212-3 Object-Oriented Applications Design in C++**

Introduction to object-oriented software design concepts, the object-oriented features of the C++ language, other advanced C++ features, plus a simple introduction to the fundamentals of graphical user interfaces and the development of windowed applications. Prerequisite: CMPT 101, 104, 125, 126 or 128. Recommended: CMPT 201 or 225.

### **CMPT 218-3 Special Topics in Computing Science**

Special topics in computing science which are of current interest or are not covered in the regular curriculum will be offered from time to time depending on availability of faculty and on student interest. Prerequisite: CMPT 201 or 205.

### **CMPT 225-3 Data Structures and Programming**

Introduction to a variety of practical and important data structures and methods for implementation and for experimental and analytical evaluation. Topics include: stacks, queues and lists; search trees; hash tables and algorithms; efficient sorting; object-oriented programming; time and space efficiency analysis; and experimental evaluation. Prerequisite: MACM 101 and one of CMPT 101, 104, 125, 126 or 128; or CMPT 128 and approval as a Biomedical Engineering Major. Students with credit for CMPT 201 may not take this course for further credit. Quantitative.

### **CMPT 250-3 Introduction to Computer Architecture**

This course deals with the main concepts embodied in computer hardware architecture. In particular, the organization, design and limitations of the major building blocks in modern computers is covered in detail. Topics will include: processor organization; control logic design; memory systems; and architectural support for operating systems and programming languages. A hardware description language will be used as a tool to express and work with design concepts. Prerequisite: CMPT/ENSC 150, or CMPT 290 or 105 with permission of instructor. This course is identical to ENSC 250 and students cannot take both courses for credit. Students who have taken CMPT 390 may not take CMPT 250 for further credit. Quantitative.

### **CMPT 261-3 Spatial Computing**

An exploration of the major concepts of analytical and computational geometry and an introduction to tools for programming geometric information and displaying the results. Students completing this course will have a basic understanding of how computer graphics systems work; skills in writing programs to display geometric information for graphics display; ability to solve geometric problems using transformations, geometric representations and the basic algorithms of computational geometry; and familiarity with various common mathematical notation for representing spatial objects. Prerequisite: CMPT 125, MATH 232. Students with credit for ITEC 271, 272, and 273 may not take this course for further credit. CMPT 261 and IAT 261 are identical courses; at most one may be taken for credit.

### **CMPT 265-3 Multimedia Programming for Art and Design**

Using cases from topics such as animation, cinema, music and design, this course introduces a variety of programming tools and techniques. Practical use of multimedia scripting languages and authoring environments is covered in the context of a series of composition and design projects. Code libraries and programming techniques for specific media will be introduced. Assessment will be based on both programming and the expressive use of programs in their case context. Prerequisite: CMPT 120 (or

equivalent first programming course). Students with credit for IART 206, 207 and 208 may not take this course for further credit. CMPT 265 and IAT 265 are identical courses; at most one may be taken for credit.

### **CMPT 267-3 Introduction to Technological Systems**

Introduction to the core technologies and systems used in media-rich interactive environments, including computer hardware, operating systems, input and output technologies, networking and media. The concepts will be examined by working in a high-level media programming environment. This course is equivalent to IAT 267; students with credit for IAT 267 may not take this course for further credit. Students who have obtained credit for, or are currently enrolled in, a computing science course at the 300 division or higher, or are approved computing science major or honors students may not take this course for further credit. Prerequisite: CMPT 120 (or equivalent first programming course).

### **CMPT 275-4 Software Engineering I**

Introduction to software engineering techniques used in analysis/design and in software project management. The course centres on a team project involving requirements gathering, object analysis and simple data normalization, use-case-driven user documentation and design followed by implementation and testing. Additionally, there is an introduction to project planning, metrics, quality assurance, configuration management, and people issues. Prerequisite: CMPT 201 or 225, MACM 101, MATH 151, one W course. MATH 154 or 157 with a grade of at least B+ may be substituted for MATH 151.

### **CMPT 276-3 Introduction to Software Engineering**

An overview of various techniques used for software development and software project management. Major tasks and phases in modern software development, including requirements, analysis, documentation, design, implementation, testing, installation, support, and maintenance. Project management issues are also introduced. Prerequisite: CMPT 225, MACM 101. Students who have taken CMPT 275 may not take this course for further credit.

### **CMPT 300-3 Operating Systems I**

This course aims to give the student an understanding of what a modern operating system is, and the services it provides. It also discusses some basic issues in operating systems and provides solutions. Topics include multiprogramming, process management, memory management, and file systems. Prerequisite: CMPT 201 or 225, and MACM 101 or CMPT 205. Students with credit for CMPT 401 may not take CMPT 300 for further credit.

### **CMPT 301-3 Information Systems Management**

Topics include strategic planning and use of information systems, current and future technologies, technology assimilation, organizational learning, end-user computing, managing projects and people, managing production operations and networks, evaluating performance and benefits, crisis management and disaster recovery, security and control, financial accountability, and proactive management techniques for a changing environment. Prerequisite: CMPT 201 or 225.

### **CMPT 305-3 Computer Simulation and Modeling**

This course is an introduction to the modelling, analysis, and computer simulation of complex systems. Topics include analytic modelling, discrete event simulation, experimental design, random number generation, and statistical analysis. Prerequisite: CMPT 201 or 225, MACM 101, STAT 270.

### **CMPT 307-3 Data Structures and Algorithms**

Analysis and design of data structures for lists, sets, trees, dictionaries, and priority queues. A selection of topics chosen from sorting, memory management, graphs and graph algorithms. Prerequisite: CMPT 201 or 225, MACM 201, MATH 152 and MATH 232 or 240.

### **CMPT 308-3 Computability and Complexity**

This course introduces students to formal models of computations such as Turing machines and RAMs. Notions of tractability and intractability are discussed both with respect to computability and resource requirements. The relationship of these concepts to logic is also covered. Prerequisite: MACM 201.

### **CMPT 310-3 Artificial Intelligence Survey**

Provides a unified discussion of the fundamental approaches to the problems in artificial intelligence. The topics considered are: representational typology and search methods; game playing, heuristic programming; pattern recognition and classification; theorem-proving; question-answering systems; natural language understanding; computer vision. Prerequisite: CMPT 201 or 225 and MACM 101.

### **CMPT 318-3 Special Topics in Computing Science**

Special topics in computing science at the 300 level. Topics that are of current interest or are not covered in regular curriculum will be offered from time to time depending on availability of faculty and student interest. Prerequisite: CMPT 201 or 225.

### **CMPT 320-3 Social Implications – Computerized Society**

An examination of social processes that are being automated and implications for good and evil, that may be entailed in the automation of procedures by which goods and services are allocated. Examination of what are dehumanizing and humanizing parts of systems and how systems can be designed to have a humanizing effect. Prerequisite: a course in computing science and 45 units. Students with credit for CMPT 260 may not take CMPT 320 for further credit. Breadth-Science.

### **CMPT 322-3 Professional Responsibility and Ethics**

The theory and practice of computer ethics. The basis for ethical decision-making and the methodology for reaching ethical decisions concerning computing matters will be studied. Writing as a means to understand and reason about complex ethical issues will be emphasized. Prerequisite: three CMPT units, 30 total units, and any lower division W course.

### **CMPT 322W-3 Professional Responsibility and Ethics**

The theory and practice of computer ethics. The basis for ethical decision-making and the methodology for reaching ethical decisions concerning computing matters will be studied. Writing as a means to understand and reason about complex ethical issues will be emphasized. Prerequisite: three CMPT units, 30 total units, and any lower division W course. Writing.

### **CMPT 340-3 Biomedical Computing**

The principles involved in using computers for data acquisition, real-time processing, pattern recognition and experimental control in biology and medicine will be developed. The use of large data bases and simulation will be explored. Prerequisite: completion of 60 units including CMPT 101, 125, 126 or 128 (or 102 or 104 with a grade of B or higher).

### **CMPT 354-3 Database Systems I**

Logical representations of data records. Data models. Studies of some popular file and database systems. Document retrieval. Other related issues such as database administration, data dictionary and security. Prerequisite: CMPT 201 or 225, MACM 101.

**CMPT 361-3 Introduction to Computer Graphics**

This course provides an introduction to the fundamentals of computer graphics. Topics include graphics display and interaction hardware, basic algorithms for 2D primitives, anti-aliasing, 2D and 3D geometrical transformations, 3D projections/viewing, Polygonal and hierarchical models, hidden-surface removal, basic rendering techniques (color, shading, raytracing, radiosity), and interaction techniques. Prerequisite: CMPT 201 or 225 and MATH 232 or 240.

**CMPT 363-3 User Interface Design**

This course provides a comprehensive study of user interface design. Topics include: goals and principles of UI design (systems engineering and human factors), historical perspective, current paradigms (widget-based, mental model, graphic design, ergonomics, metaphor, constructivist/iterative approach, and visual languages) and their evaluation, existing tools and packages (dialogue models, event-based systems, prototyping), future paradigms, and the social impact of UI. Prerequisite: CMPT 201 or 225.

**CMPT 365-3 Multimedia Systems**

Multimedia systems design, multimedia hardware and software, issues in effectively representing, processing, and retrieving multimedia data such as text, graphics, sound and music, image and video. Prerequisite: completion of 60 units including CMPT 201 or 225.

**CMPT 370-3 Information System Design**

This course focuses on the computer-related problems of information system design and procedures of design implementation. Well-established design methodologies will be discussed, and case studies will be used to illustrate various techniques of system design. Prerequisite: CMPT 275 or 276; CMPT 354.

**CMPT 371-3 Data Communications and Networking**

Data communication fundamentals (data types, rates, and transmission media). Network architectures for local and wide areas. Communications protocols suitable for various architectures. ISO protocols and internetworking. Performance analysis under various loadings and channel error rates. Prerequisite: CMPT 201 or 225, CMPT/ENSC 150 and MATH 152. MATH 155 or 158 with a grade of at least B+ may be substituted for MATH 152.

**CMPT 373-3 Software Development Methods**

Survey of modern software development methodology. Several software development process models will be examined, as will the general principles behind such models. Provides experience with different programming paradigms and their advantages and disadvantages during software development. Prerequisite: CMPT 276 or 275.

**CMPT 376-3 Technical Writing and Group Dynamics**

Covers professional writing in computing science, including format conventions and technical reports. Examines group dynamics, including team leadership, dispute resolution and collaborative writing. Also covers research methods. Prerequisite: Any lower-division W course. Co-requisite: CMPT 275.

**CMPT 376W-3 Technical Writing and Group Dynamics**

Covers professional writing in computing science, including format conventions and technical reports. Examines group dynamics, including team leadership, dispute resolution and collaborative writing. Also covers research methods. Prerequisite: Any lower-division W course. Co-requisite: CMPT 275. Writing.

**CMPT 379-3 Principles of Compiler Design**

This course covers the key components of a compiler for a high level programming language. Topics include lexical analysis, parsing, type checking, code generation and optimization. Students will work in teams to design and implement an actual compiler making use of tools such as lex and yacc. Prerequisite: MACM 201, CMPT 150 and 201 or 225.

**CMPT 383-3 Comparative Programming Languages**

Various concepts and principles underlying the design and use of modern programming languages are considered in the context of procedural, object-oriented, functional and logic programming languages. Topics include data and control structuring constructs, facilities for modularity and data abstraction, polymorphism, syntax, and formal semantics. Prerequisite: CMPT 201 or 225, MACM 101.

**CMPT 384-3 Symbolic Computing**

This course considers modelling and programming techniques appropriate for symbolic data domains such as mathematical expressions, logical formulas, grammars and programming languages. Topics include recursive and functional programming style, grammar-based data abstraction, simplification and reduction transformations, conversions to canonical form, environment data structures and interpreters, metaprogramming, pattern matching and theorem proving. Prerequisite: CMPT 225; MACM 101.

**CMPT 401-3 Operating Systems II**

Advanced concepts in modern operating systems such as scheduling algorithms, address space protection, virtual memory, multiprocessor operating systems, microkernels, virtual machine hypervisors, embedded and real-time operating systems. Students will implement parts of an operating system. Prerequisite: CMPT 150 and 300.

**CMPT 404-3 Cryptography and Cryptographic Protocols**

The main cryptographic tools and primitives, their use in cryptographic applications; security and weaknesses of the current protocols. The notion of security, standard encryption schemes, digital signatures, zero-knowledge, selected other topics. Prerequisite: MACM 201. CMPT 307 and 308 are recommended.

**CMPT 405-3 Design and Analysis of Computing Algorithms**

Models of computation, methods of algorithm design; complexity of algorithms; algorithms on graphs, NP-completeness, approximation algorithms, selected topics. Prerequisite: CMPT 307.

**CMPT 406-3 Computational Geometry**

Mathematical preliminaries; convex hull algorithms; intersection problems; closest-point problems and their applications. Prerequisite: CMPT 307.

**CMPT 407-3 Computational Complexity**

Machine models and their equivalences, complexity classes, separation theorems, reductions, Cook's theorem, NP-completeness, the polynomial time hierarchy, boolean circuit models and parallel complexity theory, other topics of interest to the students and instructor. Prerequisite: CMPT 307.

**CMPT 408-3 Theory of Computing Networks/Communications**

Network design parameters and goals, dynamic networks and permutations, routing in direct networks, structured communication in direct networks, other topics of interest to the students and instructor. Prerequisite: CMPT 307 and 371.

**CMPT 409-3 Special Topics in Theoretical Computing Science**

Current topics in theoretical computing science depending on faculty and student interest. Prerequisite: CMPT 307.

**CMPT 411-3 Knowledge Representation**

Formal and foundational issues dealing with the representation of knowledge in artificial intelligence systems are covered. Questions of semantics, incompleteness, non-monotonicity and others will be examined. As well, particular approaches, such as procedural or semantic network, may be discussed. Prerequisite: completion of nine units in Computing Science upper division courses or, in exceptional cases, permission of the instructor.

**CMPT 412-3 Computational Vision**

Computational approaches to image understanding will be discussed in relation to theories about the operation of the human visual system and with respect to practical applications in robotics. Topics will include edge detection, shape from shading, stereopsis, optical flow, Fourier methods, gradient space, three-dimensional object representation and constraint satisfaction. Prerequisite: MATH 152, and nine units in Computing upper division courses or permission of the instructor.

**CMPT 413-3 Computational Linguistics**

This course examines the theoretical and applied problems of constructing and modelling systems, which aim to extract and represent the meaning of natural language sentences or of whole discourses, but drawing on contributions from the fields of linguistics, cognitive psychology, artificial intelligence and computing science. Prerequisite: completion of nine units in Computing Science upper division courses or, in exceptional cases, permission of the instructor.

**CMPT 414-3 Model-Based Computer Vision**

This course covers various topics in computer vision with the emphasis on the model-based approach. Main subjects include 2-D and 3-D representations, matching, constraint relaxation, model-based vision systems. State-of-the-art robot vision systems will be used extensively as study cases. The solid modelling and CAD aspects of this course should also interest students of computer graphics. Prerequisite: MATH 152 and nine units in CMPT upper division courses, or permission of the instructor.

**CMPT 415-3 Special Research Projects**

To be individually arranged.

**CMPT 416-3 Special Research Projects**

To be individually arranged.

**CMPT 417-3 Intelligent Systems**

Intelligent Systems using modern constraint programming and heuristic search methods. A survey of this rapidly advancing technology as applied to scheduling, planning, design and configuration. An introduction to constraint programming, heuristic search, constructive (backtrack) search, iterative improvement (local) search, mixed-initiative systems and combinatorial optimization. Prerequisite: CMPT 201 or 225.

**CMPT 418-3 Computational Cognitive Architecture**

Computationally-oriented theories of human cognitive architecture are explored, beginning with neurologically inspired (neural network) models of "low-level" brain processes, and progressing upwards to higher-level symbolic processing, of the kind that occurs in rule-following and problem solving. Arguments concerning the need for modular processing and combinatorially adequate forms of mental representation are examined at length. Prerequisite: CMPT 201 or 225. Recommended: CMPT 310.

**CMPT 419-3 Special Topics in Artificial Intelligence**

Current topics in artificial intelligence depending on faculty and student interest. Prerequisite: CMPT 310 or permission of the instructor.

**CMPT 426-3 Practicum I**

First term of work experience in the School of Computing Science Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: students must complete Bridging Online (visit [www.sfu.ca/coop/bol](http://www.sfu.ca/coop/bol) for further details) at least two terms before their anticipated co-op placement. Students must then enrol with the co-op program by the second week of the term preceding the work term. Normally, students will have completed a minimum of 45 units by the end of the term of application, CMPT 275 and have a minimum CGPA of 2.50. Graded as pass/fail (P/F).

**CMPT 427-3 Practicum II**

The second term of work experience for students in the Computing Science Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: CMPT 426, CGPA of 2.50. Graded as pass/fail (P/F).

**CMPT 428-3 Practicum III**

The third term of work experience for students in the Computing Science Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: CMPT 427, CGPA of 2.50. Graded as pass/fail (P/F).

**CMPT 429-3 Practicum IV**

The fourth term of work experience for students in the Computing Science Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: CMPT 428, CGPA of 2.50. Graded as pass/fail (P/F).

**CMPT 430-3 Practicum V**

An optional fifth term of work experience for students in the Computing Science Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: CMPT 429, CGPA of 2.50. Graded as pass/fail (P/F).

**CMPT 431-3 Distributed Systems**

An introduction to distributed systems: systems consisting of multiple physical components connected over a network. Architectures of such systems, ranging from client-server to peer-to-peer. Distributed systems are analyzed via case studies of real network file systems, replicated systems, sensor networks and peer-to-peer systems. Hands-on experience designing and implementing a complex distributed system. Prerequisite: CMPT 300, 371. Students who have taken CMPT 401 before September 2008 may not take this course for further credit.

**CMPT 432-3 Real-time Systems**

The design and implementation of real-time systems. Techniques for specifying system timing requirements and determining if these requirements are met. Different models for the design of real-time schedulers are examined and analyzed. The design of real-time operating systems and their role in supporting real-time systems are also studied. Prerequisite: CMPT 250, 300.

**CMPT 433-3 Embedded Systems**

The basics of embedded system organization, hardware-software co-design, and programmable chip technologies are studied. Formal models and specification languages for capturing and analyzing the behavior of embedded systems. The design and use of tools for system partitioning and hardware/software co-design implementation, validation, and verification are also studied. Prerequisite: CMPT 250, 300.

**CMPT 441-3 Computational Biology**

This course introduces students to the computing science principles underlying computational biology. The emphasis is on the design, analysis and implementation of computational techniques. Possible topics include algorithms for sequence alignment, database searching, gene finding, phylogeny and

structure analysis. Prerequisite: CMPT 307. Students with credit for CMPT 341 may not take this course for further credit.

**CMPT 454-3 Database Systems II**

An advanced course on database systems which covers crash recovery, concurrency control, transaction processing, distributed database systems as the core material and a set of selected topics based on the new developments and research interests, such as object-oriented data models and systems, extended relational systems, deductive database systems, and security and integrity. Prerequisite: CMPT 300 and 354.

**CMPT 456-3 Information Retrieval and Web Search**

Introduction to the essentials of information retrieval and the applications of information retrieval in web search and web information systems. Topics include the major models of information retrieval, similarity search, text content search, link structures and web graphics, web mining and applications, crawling, search engines, and some advanced topics such as spam detection, online advertisement, and fraud detection in online auctions. Prerequisite: CMPT 354.

**CMPT 459-3 Special Topics in Database Systems**

Current topics in database and information systems depending on faculty and student interest. Prerequisite: CMPT 354.

**CMPT 461-3 Image Synthesis**

Covers advanced topics and techniques in computer graphics with a focus on image synthesis. Topics include photorealistic rendering, advanced ray tracing, Monte Carlo methods, photon maps, radiosity, light fields, participating media, as well as tone reproduction. Prerequisite: CMPT 361, MACM 201 and 316. Students with credit for CMPT 451 may not take CMPT 461 for further credit.

**CMPT 464-3 Geometric Modeling in Computer Graphics**

Covers advanced topics in geometric modeling and processing for computer graphics, such as Bezier and B-spline techniques, subdivision curves and surfaces, solid modeling, implicit representation, surface reconstruction, multi-resolution modeling, digital geometry processing (e.g. mesh smoothing, compression, and parameterization), point-based representation, and procedural modeling. Prerequisite: CMPT 361, MACM 316. Students with credit for CMPT 469 between 2003 and 2007 or equivalent may not take CMPT 464 for further credit.

**CMPT 466-3 Animation**

Topics and techniques in animation, including: The history of animation, computers in animation, traditional animation approaches, and computer animation techniques such as geometric modelling, interpolation, camera controls, kinematics, dynamics, constraint-based animation, realistic motion, temporal aliasing, digital effects and post production. Prerequisite: CMPT 361 and MACM 316 or permission of the instructor.

**CMPT 467-3 Visualization**

Presents advanced topics in the field of scientific and information visualization. Topics include an introduction to visualization (importance, basic approaches, and existing tools), abstract visualization concepts, human perception, visualization methodology, data representation, 2D and 3D display, interactive visualization, and their use in medical, scientific, and business applications. Prerequisite: CMPT 361, MACM 316.

**CMPT 468-3 Introduction to Computer Music and Sound Synthesis**

An introduction to the fundamentals of digital audio, computer music, basic sound synthesis algorithms, and digital audio effects and processing. Topics

include concepts of sound and digital audio representation, basic concepts of digital filtering, fundamentals of spectrum analysis, and sound synthesis techniques. Understanding of theoretical concepts will be consolidated through practical programming assignments in Matlab, however there will also be exposure to various freeware real-time audio programming and sound editing environments. Prerequisite: MATH 152 and one of CMPT 125, 126 or 128 (or permission of instructor).

**CMPT 469-3 Special Topics in Computer Graphics**

Current topics in computer graphics depending on faculty and student interest. Prerequisite: CMPT 361.

**CMPT 470-3 Web-based Information Systems**

This course examines: two-tier/multi-tier client/server architectures; the architecture of a Web-based information system; web servers/browser; programming/scripting tools for clients and servers; database access; transport of programming objects; messaging systems; security; and applications (such as e-commerce and on-line learning). Prerequisite: CMPT 354. Students who have taken CMPT 474 may not take this course for further credit.

**CMPT 471-3 Networking II**

This course covers the fundamentals of higher level network functionality such as remote procedure/object calls, name/address resolution, network file systems, network security and high speed connectivity/bridging/switching. Prerequisite: CMPT 300 and 371.

**CMPT 473-3 Software Quality Assurance**

Factors in software quality include functionality, reliability, usability, efficiency, maintainability, and portability. Techniques for assessing the quality of software with respect to such factors, and methods for improving the quality of both software products and software development processes. Prerequisite: CMPT 373.

**CMPT 474-3 Web Systems Architecture**

Web service based systems are fundamentally different from traditional software systems. The conceptual and methodological differences between a standard software development process and the development of a web service based information system. The technology involved during the construction of their own web service based application in an extensive project. Prerequisite: CMPT 371.

**CMPT 475-3 Software Engineering II**

Students will study in-depth the techniques, tools and standards needed in the management of software development. Topics will include software process and quality standards, life cycle models, requirements specification issues, project estimation, planning and tracking, project management tools, team dynamics and management, configuration and change management techniques and tools, metrics, quality assurance and test techniques, professional and legal issues. Prerequisite: CMPT 275 or 276 and 15 units of upper division courses. Recommended: co-op experience. Students with credit for CMPT 373 may not take this course for further credit.

**CMPT 477-3 Introduction to Formal Verification**

Introduces, at an accessible level, a formal framework for symbolic model checking, one of the most important verification methods. The techniques are illustrated with examples of verification of reactive systems and communication protocols. Students learn to work with a model checking tool. Prerequisite: CMPT 275 or 276.

**CMPT 479-3 Special Topics in Computing Systems**

Current topics in computing systems depending on faculty and student interest. Prerequisite: CMPT 401.

**CMPT 481-3 Functional Programming**

The functional style of programming will be examined in the context of a modern functional language such as Haskell. Topics will include lazy evaluation and infinite data structures, higher order functions, pattern matching, program transformation and verification, and polymorphic types. Prerequisite: CMPT 383.

**CMPT 489-3 Special Topics in Programming Language**

Current topics in programming languages depending on faculty and student interest. Prerequisite: CMPT 383.

**CMPT 496-3 Directed Studies**

Independent study in topics selected in consultation with the supervising instructor(s) that are not covered by existing course offerings. Students must submit a proposal to the undergraduate chair, including the name and signature of the supervising faculty member(s). The proposal must include details of the material to be covered and the work to be submitted. Prerequisite: students must have completed 90 units, including 15 units of upper division CMPT courses, and have a GPA of at least 3.00. The proposal must be submitted to the undergraduate chair at least 15 days in advance of the term. The proposal must be signed by the supervisor(s) and the undergraduate chair.

**CMPT 497-6 Dual Degree Program Capstone Project**

Students will select one project to be completed in their final year of study. Each student must complete a project report and make a project presentation. The project may include: a research survey, a project implementation, a research paper/report. Prerequisite: Students must be in their final year of the Dual Degree Program.

**CMPT 498-6 Honors Research Project**

Students must submit a proposal to the Undergraduate Chair, including the name and signature of the supervising faculty member(s). Students must complete a project report and make a project presentation. This course can satisfy the research project requirements for Computing Science honors students. Prerequisite: students must have completed 90 units, including 15 units of upper division CMPT courses, and have a GPA of at least 3.00. The proposal must be submitted to the Undergraduate Chair at least 15 days in advance of the term. The proposal must be signed by the supervisor(s) and the undergraduate chair.

**CMPT 499-3 Special Topics in Computer Hardware**

Current topics in computer hardware depending on faculty and student interest. Prerequisite: CMPT/ENSC 250 or CMPT 390.

**CMPT 505-3 Problem Based Learning in Bioinformatics**

The problem-based learning course will develop students' ability to exchange ideas in small groups focused on real but simplified problems in bioinformatics. Problems will be carefully selected to cover all aspects of bioinformatics research. Prerequisites: enrolled in Graduate Diploma in Bioinformatics. This course is identical to MBB 505 and students can not take both courses for credit.

**CMPT 506-3 Critical Research Analysis**

Advanced seminar series for bioinformatics. Prerequisites: Enrolment in Graduate Diploma in Bioinformatics. This course is identical to MBB 506 and students can not take both courses for credit.

**CMPT 601-5 Computing Science Education I**

This course will introduce graduate students in Education to the basics of computing science. Emphasis will be placed on the use of microcomputers. Topics will be programming microcomputers; file handling; microcomputer

hardware; word processing; graphics; social, economic and legal implications. Prerequisite: graduate status in education. If the student has an adequate background in computing, this course must be replaced by other computing science undergraduate or graduate courses.

**CMPT 602-5 Computing Science Education II**

This course introduces some formal topics in Computing Science to the graduate student in education. Topics include discrete mathematical structures; models of computing; data structures; formal languages and algorithms. Also, methods will be introduced for the design and implementation of large programs using structured modular design. Prerequisite: CMPT 601 or consent of instructor(s).

**CMPT 611-6 Research Rotation I**

One term of original bioinformatics research conducted in the lab of a designated mentor. Students are required to write their results in a scientific journal format and defend these results before a panel consisting of the project mentor plus two other qualified faculty members. Prerequisite: enrolment in Graduate Diploma in Bioinformatics. This course is identical to MBB 611 and students can not take both courses for credit.

**CMPT 612-6 Research Rotation II**

One term of original bioinformatics research conducted in the lab of a designated mentor. Students are required to write their results in a scientific journal format and defend these results before a panel consisting of the project mentor plus two other qualified faculty members. Prerequisites: enrolment in Graduate Diploma in Bioinformatics. This course is identical to MBB 612 and students can not receive credit for both courses.

**CMPT 613-6 Research Rotation III**

One term of original bioinformatics research conducted in the lab of a designated mentor. Students are required to write their results in a scientific journal format and defend these results before a panel consisting of the project mentor plus two other qualified faculty members. Prerequisites: enrolment in Graduate Diploma in Bioinformatics. This course is identical to MBB 613 and student can not receive credit for both courses.

**CMPT 701-3 Computability and Logic**

Deep connections between logic and computation have been evident since early work in both areas. More recently, logic-based methods have led to important progress in diverse areas of computing science. This course will provide a foundation in logic and computability suitable for students who wish to understand the application of logic in various areas of CS, or as preparation for more advanced study in logic or theoretical CS.

**CMPT 705-3 Design and Analysis of Algorithms**

The objective of this course is to expose students to basic techniques in algorithm design and analysis. Topics will include greedy algorithms, dynamic programming, advanced data structures, network flows, randomized algorithms.

**CMPT 710-3 Computational Complexity**

This course provides a broad view of theoretical computing science with an emphasis on complexity theory. Topics will include a review of formal models of computation, language classes, and basic complexity theory; design and analysis of efficient algorithms; survey of structural complexity including complexity hierarchies, NP-completeness, and oracles; approximation techniques for discrete problems.

**CMPT 711-3 Bioinformatics Algorithms**

Fundamental algorithmic techniques used to solve computational problems encountered in molecular biology. This area is usually referred to as

Bioinformatics or Computational Biology. Students who have taken CMPT 881 (Bioinformatics) in 2007 or earlier may not take CMPT 711 for further credit.

**CMPT 721-3 Knowledge Representation and Reasoning**

Knowledge representation is the area of Artificial Intelligence concerned with how knowledge can be represented symbolically and manipulated by reasoning programs. This course addresses problems dealing with the design of languages for representing knowledge, the formal interpretation of these languages and the design of computational mechanisms for making inferences. Since much of Artificial Intelligence requires the specification of a large body of domain-specific knowledge, this area lies at the core of AI. Prerequisites: CMPT 310/710 recommended. Cross-listed course with CMPT 411.

**CMPT 725-3 Logical Methods in Computational Intelligence**

Provides an overview and in-depth introduction on several new developments in computational logic for intelligent systems. In particular, we shall cover three areas of strategic importance: natural language processing, abductive logic programming and constraint-based logic programming. The purpose is to introduce graduate students to the frontiers of computational logic research and applications. Students of various backgrounds, such as Linguistics and Cognitive Sciences, are most welcome. Some of the course will proceed in seminar style. Students should be prepared to read and present papers and to participate in discussions.

**CMPT 726-3 Machine Learning**

Machine Learning is the study of computer algorithms that improve automatically through experience. Provides students who conduct research in machine learning, or use it in their research, with a grounding in both the theoretical justification for, and practical application of, machine learning algorithms. Covers techniques in supervised and unsupervised learning, the graphical model formalism, and algorithms for combining models. Students who have taken CMPT 882 (Machine Learning) in 2007 or earlier may not take CMPT 726 for further credit.

**CMPT 730-3 Programming Languages**

This course will cover basic concepts in the area of programming languages. The course will be largely of a theoretical nature and will concentrate on fundamental concepts of lasting importance, rather than topics of current interest.

**CMPT 731-3 Functional Programming**

This course will cover functional programming including introduction to a functional programming language, program transformation and verification, implementation of functional programming languages, and other selected topics which may include parallel evaluation of functional programs, analysis of performance, and advanced applications. Students who have taken CMPT 831 may not take this course for further credit.

**CMPT 740-3 Database Systems**

Introduction to advanced database system concepts, including query processing, transaction processing, distributed and heterogeneous databases, object-oriented and object-relational databases, data mining and data warehousing, spatial and multimedia systems and Internet information systems.

**CMPT 741-3 Data Mining**

The student will learn basic concepts and techniques of data mining. Unlike data management required in traditional database applications, data analysis aims to extract useful patterns, trends and knowledge from raw data for decision support. Such information are implicit in the data and must be mined to be useful.

**CMPT 745-3 Software Engineering**

This course examines fundamental principles of software engineering and state-of-the-art techniques for improving the quality of software designs. With an emphasis on methodological aspects and mathematical foundations, the specification, design and test of concurrent and reactive systems is addressed in depth. Students learn how to use formal techniques as a practical tool for the analysis and validation of key system properties in early design stages. Applications focus on high level design of distributed and embedded systems.

**CMPT 755-3 Compiler Theory**

Precedence, LL(k), LR(k) grammars; SLR(k), LALR(k), L(m)R(k) parsing techniques; transduction grammars; general compiler organization, code generation and optimization; memory allocation for object programs; garbage collection. Students who have taken CMPT 830 may not take this course for further credit.

**CMPT 760-3 Operating Systems**

This course will discuss design issues relating to the functionality and performance of modern workstation operating systems, such as methods for sharing memory, file and data objects, and choice of communication protocols. The special needs of high performance multiprocessor systems and real time systems will also be addressed.

**CMPT 761-3 Image Synthesis**

Advanced topics and techniques in computer graphics with a focus on image synthesis are covered. Topics include photorealistic rendering, advanced ray tracing, Monte Carlo methods, photon maps, radiosity, light fields, participating media, as well as tone reproduction. Students with credit for CMPT 461, CMPT 770, or equivalent may not take CMPT 761 for further credit.

**CMPT 764-3 Geometric Modeling in Computer Graphics**

Advanced topics in geometric modeling and processing for computer graphics, such as Bezier and B-spline techniques, subdivision curves and surfaces, solid modeling, implicit representation, surface reconstruction, multi-resolution modeling, digital geometry processing (e.g., mesh smoothing, compression, and parameterization), point-based representation, and procedural modeling. Prerequisite: CMPT 361, MACM 316. Students with credit for CMPT 464 or equivalent may not take CMPT 764 for further credit.

**CMPT 765-3 Computer Communication Network**

This course will cover the fundamentals and recent advances in computer communication networks. The emphasis will be on the design and analysis of networks, especially switching, routing, and network topology.

**CMPT 767-3 Visualization**

Advanced topics in the field of scientific and information visualization are presented. Topics may include: an introduction to visualization (importance, basic approaches and existing tools), abstract visualization concepts, human perception, visualization methodology, 2D and 3D display and interaction and their use in medical, scientific, and business applications. Prerequisite: CMPT 316, 461 or equivalent (by permission of instructor). Students who have taken CMPT 878 or 775 may not take this course for further credit.

**CMPT 768-3 Computer Music Theory and Sound Synthesis**

Introduces the fundamentals of digital audio signal processing, with applications to computer music and sound analysis/synthesis. Students who have taken CMPT 468 cannot take this course for additional credit.

**CMPT 771-3 Internet Architecture and Protocols**

Investigates the design and operation of the global network of networks: the Internet. This course studies the structure of the Internet and the TCP/IP protocol suit that enables it to scale to millions of hosts. The focus is on design principles, performance modeling, and services offered by the Internet.

**CMPT 773-3 User Interface Design**

This course provides an overview of a number of research areas in human-computer interaction. Topics may include: overview of HCI (historical/intellectual, GUI, case studies), interactive systems (design, evaluation, software development), interaction methods (vision, graphic design, touch, speech, etc.), human factors (information processing, capabilities), research frontiers (computer supported co-operative work, intelligent systems, hypertext, multimedia, virtual reality, cyberspace). Recommended: CMPT 363 or equivalent (instructor discretion). Students who have taken CMPT 873 may not take this course for further credit.

**CMPT 777-3 Formal Verification**

The goal of formal verification is to prove correctness or to find mistakes in software and other systems. This course introduces, at an accessible level, a formal framework for symbolic model checking, one of the most important verification methods. The techniques are illustrated with examples of verification of reactive systems and communication protocols. Students learn to work with a model checking tool such as NuSMV.

**CMPT 813-3 Computational Geometry**

This course covers recent developments in discrete, combinatorial, and algorithmic geometry. Emphasis is placed on both developing general geometric techniques and solving specific problems. Open problems and applications will be discussed.

**CMPT 814-3 Algorithmic Graph Theory**

Algorithm design often stresses universal approaches for general problem instances. If the instances possess a special structure, more efficient algorithms are possible. This course will examine graphs and networks with special structure, such as chordal, interval, and permutation graphs, which allows the development of efficient algorithms for hard computational problems.

**CMPT 815-3 Algorithms of Optimization**

This course will cover a variety of optimization models, that naturally arise in the area of management science and operations research, which can be formulated as mathematical programming problems.

**CMPT 816-3 Theory of Communication Networks**

This course investigates the design, classification, modelling, analysis, and efficient use of communication networks such as telephone networks, interconnection networks in parallel processing systems, and special-purpose networks.

**CMPT 820-3 Multimedia Systems**

This seminar course covers current research in the field of multimedia computing. Topics include multimedia data representation, compression, retrieval, network communications and multimedia systems. Computing science graduate student or permission of instructor.

**CMPT 821-3 Robot Vision**

This course discusses issues and research results pertinent to robot vision. Topics include depth recovery for robot navigation, three dimensional object recognition and scene analysis, model-based approaches, parallel vision machines and algorithms, and case studies of contemporary robot vision systems.

**CMPT 822-3 Computational Vision**

A seminar based on the artificial intelligence approach to vision. Computational vision has the goal of discovering the algorithms and heuristics which allow a two dimensional array of light intensities to be interpreted as a three dimensional scene. By reading and discussing research papers — starting with the original work on the analysis of line drawings, and ending with the most recent work in the field — participants begin to develop a general overview of computational vision, and an understanding of the current research problems.

**CMPT 823-3 Formal Topics – Knowledge Representation**

This course surveys current research in formal aspects of knowledge representation. Topics covered in the course will centre on various features and characteristics of encodings of knowledge, including incomplete knowledge, non monotonic reasoning, inexact and imprecise reasoning, meta-reasoning, etc. Suggested preparation: a course in formal logic and a previous course in artificial intelligence.

**CMPT 825-3 Natural Language Processing**

In this course, theoretical and applied issues related to the development of natural language processing systems and specific applications are examined. Investigations into parsing issues, different computational linguistic formalisms, natural language syntax, semantics, and discourse related phenomena will be considered and an actual natural language processor will be developed.

**CMPT 826-3 Automated Learning and Reasoning**

This course covers topics shared both by AI and cognitive science. Current AI research papers are examined from the perspective of cognitive science, and vice versa. Topics covered in a given term will vary, depending upon the instructor, but most of the following topics will be addressed in any given term: connectionist models of intelligence; 'human-like' automated deduction; reasoning by analogy; topics in natural language; automated concept learning; and computational approaches to semantics. Prerequisite: at least one graduate or undergraduate AI course, or instructor's permission.

**CMPT 827-3 Intelligent Systems**

Intelligent systems are knowledge-based computer programs which emulate the reasoning abilities of human experts. This introductory course will analyze the underlying artificial intelligence methodology and survey advances in rule-based systems, constraint solving, incremental reasoning, intelligent backtracking and heuristic local search methods. We will look specifically at research applications in intelligent scheduling, configuration and planning. The course is intended for graduate students with a reasonable background in symbolic programming.

**CMPT 829-3 Special Topics in Bioinformatics**

Examination of recent literature and problems in bioinformatics. Within the CIHR graduate bioinformatics training program, this course will be offered alternatively as the problem-based learning course and the advanced graduate seminar in bioinformatics (both concurrent with MBB 829). Prerequisite: permission of the instructor.

**CMPT 842-3 Concurrency Control in Database Systems**

Transactions, recoverability, serializability theory, schedulers, locking, timestamping, optimistic schedulers, multiversion database systems; recovery, commit protocols, termination protocols; replicated database systems, quorum based concurrency control; distributed snapshot taking, distributed deadlock detection, reliable storage systems; concurrency control in object oriented database systems.

**CMPT 843-3 Database and Knowledge-base Systems**

An advanced course on database systems which focuses on data mining and data warehousing, including their principles, designs, implementations, and applications. It may cover some additional topics on advanced database system concepts, including deductive and object-oriented database systems, spatial and multimedia databases, and database-oriented Web technology.

**CMPT 852-3 VLSI Systems Design**

This course links two fields that traditionally have been considered two separate entities: computer architecture and integrated circuit design. The vehicle used to demonstrate the interaction of layout issues and architectural concepts is metal oxide semiconductor technology.

**CMPT 880-3 Special Topics in Computing Science**

This course aims to give students experience to emerging important areas of computing science. Prerequisite: instructor discretion.

**CMPT 881-3 Special Topics in Theoretical Computing Science****CMPT 882-3 Special Topics in Artificial Intelligence****CMPT 884-3 Special Topics in Database Systems****CMPT 885-3 Special Topics in Computer Architecture****CMPT 886-3 Special Topics in Operating Systems****CMPT 888-3 Special Topics in Computer Graphics, HCI, Vision and Visualization**

Examines current research topics in computer graphics, human computer interaction (including audio), computer vision and visualization.

**CMPT 889-3 Special Topics in Interdisciplinary Computing****CMPT 891-3 Advanced Seminar**

Acquaints new graduate students with the research interests of the faculty, and introduces students to issues relevant to their graduate students. Grade given: S (satisfactory) or U (unsatisfactory).

**CMPT 894-3 Directed Reading****CMPT 897-6 MSc Project****CMPT 898-6 MSc Thesis****CMPT 899-6 PhD Thesis**

## Contemporary Arts FPA Faculty of Communication, Art and Technology

**FPA 104-3 Music Fundamentals**

This course is designed to provide a basic understanding of the elements of music and teaches the skill of reading music notation. An introduction to music theory and exposure to the application of music materials in a wide spectrum of music literature will be accompanied by practical exercises. The course is designed for students with no formal music training. May be of particular interest to students in other departments.

**FPA 111-3 Issues in Fine and Performing Arts**

This course introduces students to some basic issues in the fine and performing arts through the presentation and discussion of selected works in dance, film, music, theatre and visual art. It is designed to give students who intend further study in one or more of these arts some familiarity with critical issues affecting all of them. It is a recommended preparation for the school's upper division history and critical courses. May be of particular interest to students in other departments. Breadth-Humanities.

**FPA 120-3 Introduction to Contemporary Dance**

Development of movement skills through fundamentals of contemporary dance technique, explorations in improvisation, and short composition studies. An introduction to dance literature will focus on selected topics. May be of particular interest to students in other departments.

**FPA 122-4 Contemporary Dance I**

First of two studio courses in contemporary dance and ballet technique. Introduces theoretical approaches to contemporary dance. This is one of four courses required for entry into the dance major and minor programs. Prerequisite: prior approval as a result of an audition. Corequisite: FPA 122 and FPA 129 must be taken concurrently.

**FPA 123-4 Contemporary Dance II**

Continues and expands on the work undertaken in FPA 122. Emphasizes work in contemporary dance and ballet technique with attention to theoretical approaches to contemporary dance. Prerequisite: FPA 122. Corequisite: FPA 123 and FPA 124 must be taken concurrently.

**FPA 124-3 Dance Improvisation**

Selected dance improvisational skills will be explored in a variety of solo, duet, small group and large group forms through structured movement themes. Emphasis will be on sensory awareness, elements of movement, and literal and abstract imagistic stimuli. (studio) This is one of four courses required for entry into the BFA dance major and extended minor. Recommended: dance or theatre experience.

**FPA 129-3 Movement Fundamentals**

This studio/theory course incorporates techniques of body awareness, centering, and structural realignment. The emphasis is on body conditioning and body connectedness. This course will be of interest to dancers, actors, kinesiologists, and athletes. This is one of four courses required for entry into the dance major and extended minor program.

**FPA 130-4 Fundamentals of Film**

Introduces students to the basic components of filmmaking through lectures, film screenings and creative projects in the various media that combine to form cinema. Prerequisite: prior approval through formal application. Students who have taken FPA 132, 133, 134 or 230 may not take FPA 130 for further credit. A laboratory fee is required. Students should be advised that course activities may require additional costs.

**FPA 131-4 Filmmaking I**

An introductory course in 16 mm. film production, emphasizing creative use of the medium. Each student is expected to conceive, direct and edit a short film with a non-synchronous sound track, as well as participate in the making of class exercises and other students' films. Prerequisite: FPA 130 and prior approval. A laboratory fee is required. Students should be advised that film production will probably incur significant costs in addition to lab fees. Students who completed FPA 230 The Crafts of Film I in spring 1990 or earlier may not take this course for further credit.

**FPA 135-3 Introduction to Cinema**

An introductory course designed to facilitate a fundamental understanding of film technique, style and form in order to develop the skills with which to analyze films of all genres. Through lectures and screenings it will provide an overview of the social, aesthetic and technical development of motion pictures, introducing tools for the formal analysis of the elements of cinema: cinematography and lighting, art direction, performance, editing, sound and the screenplay. The formal and historical elements of documentary, avant-garde and dramatic films will be addressed. The course will involve the screening and

discussion of several complete feature films and shorts, as well as excerpts from others.

**FPA 136-3 The History and Aesthetics of Cinema I**

This course will examine the early development of cinema from 1890 until about 1945, with particular emphasis on the fundamental principles of film as an art form. A substantial number of films will be shown during laboratory sessions. Students with credit for FPA 236 offered in 1982/83 and prior years may not take this course for further credit. May be of particular interest to students in other departments. Breadth-Humanities.

**FPA 137-3 The History and Aesthetics of Cinema II**

This course will examine selected developments in cinema from 1945 to the present, with attention to various styles of artistic expression in film. A substantial number of films will be shown during laboratory sessions. Students with credit for FPA 237 offered in 1982/83 and prior years may not take FPA 137 for further credit. May be of particular interest to students in other departments. Breadth-Humanities.

**FPA 140-3 Music after 1900**

An introductory survey of major historical trends and practices of music in the 20th and 21st centuries as revealed by the study of selected music examples. Critical issues fundamental to an understanding of contemporary composition will be examined (e.g. impressionism, twelve-tone music, indeterminacy, the role of technology, improvisation). Prerequisite: FPA 104. May be of particular interest to students in other departments. Breadth-Humanities.

**FPA 145-3 Introduction to Music Composition and Theory**

This course introduces basic concepts of music composition such as melody and pitch organization, harmony, rhythm and form. The fundamental principles of theory and acoustics (e.g. voice-leading, overtone structure, metre) will be studied with particular reference to composition. Students will compose short works within given guidelines that address specific compositional issues. Prerequisite: FPA 104.

**FPA 147-3 Introduction to Electroacoustic Music**

An introduction to the application of electroacoustic technology to music, including the concepts of the audio signal, signal processing and sound synthesis in their musical applications. The techniques of tape music, electronic music and computer music composition will be introduced and their role in both studio composition and live performance will be discussed. Practical experience in several of these areas is included in the lab component. Breadth-Humanities.

**FPA 150-3 Introduction to Acting I**

An approach to the elements of acting based on improvisation, with some attention to working from established texts. Focus will be placed on the development of the actor's instrument. The work will include the development of individual powers of expression — vocally, physically, intellectually, imaginatively, and emotionally. May be of particular interest to students in other departments.

**FPA 151-3 Introduction to Acting II**

Expands the work of Acting I with an increased emphasis on text, leading to scene work. Prerequisite: FPA 150. Students who have completed FPA 152 may not take 151 for further credit. May be of particular interest to students in other departments.

**FPA 160-3 Introductory Studio in Visual Art I**

A hands-on studio course modeled on the progressive development of artistic practice from simple mark-making to full scale installation. Through a process of continuous transformation, an original

idea is developed in a sequence of methods, materials and scales. Some research is required. A course materials fee is required.

### **FPA 161-3 Introductory Studio in Visual Art II**

A continuation of the work begun in FPA 160, with emphasis on particular problems in the visual arts worked through a series of projects, culminating in the Campus Project, a site-specific public work designed, built and installed at the end of the term. Some research is required. Prerequisite: FPA 160. A course materials fee is required. May be of particular interest to students in other departments.

### **FPA 167-3 Visual Art and Culture I**

An introduction to the visual arts of the nineteenth century. Formal and thematic approaches to the arts will be introduced, with attention to the social, institutional, national, and international contexts of art. Breadth-Humanities.

### **FPA 168-3 Visual Art and Culture II**

A study of the visual arts from the twentieth century to the present, with attention to the artists, artworks, movements, and discourses that re-defined the functions and meanings of art. The debates of modernism, postmodernity, postcolonialism, feminism, and the avant-garde will be systematically explored. Breadth-Humanities.

### **FPA 170-3 Introduction to Production Technology**

An introduction to the processes, tools and technology used in the production and presentation of the fine and performing arts. Course requirements will include hands-on assignments in the production of theatre, dance, and music events. Students will work directly with equipment and materials, and are expected to be involved in work on productions and exhibitions outside of lecture and lab hours. Laboratory fee required. May be of particular interest to students in other areas and departments.

### **FPA 171-3 Introduction to Stage and Production Management**

An introduction to the management, and organization of the performing arts. This course will provide a grounding for students who wish to become further involved in the administration of the performing arts and may include practical experience outside of regular seminar hours. May be of particular interest to students in other areas and departments. Students who have received credit for FPA 171 STT-Intro to Stage and Production Management may not take FPA 171 for further credit.

### **FPA 210-3 Artworks, Theories, Contexts**

Introduces theoretical concepts and historical issues that have informed the creation, perception, interpretation, and analysis of selected artworks in formative epochs, such as the Renaissance, Romanticism, Modernism, or Postmodernism. Prerequisite: 24 units including six in the history or theory of the fine or performing arts. Students with credit for FPA 211 Introduction to Contemporary Theory in the Arts cannot take this course for further credit.

### **FPA 220-4 Contemporary Dance III**

The first studio course in a series designed for students pursuing a major or extended minor in dance. Emphasizes work in contemporary dance and is designed to develop technical facility in movement and acquaint the student with form and style in contemporary dance. Prerequisite: FPA 122, 123, 124, 129 and prior approval by interview.

### **FPA 221-4 Contemporary Dance IV**

The second studio course in a series designed for students pursuing a major or extended minor in dance. Expands on the work undertaken in FPA 220-4 Contemporary Dance III and aims to develop technical facility in movement and acquaint the

student with form and style in contemporary dance. (studio) Prerequisite: FPA 220.

### **FPA 224-3 Dance Composition I**

Study in the craft of dance composition emphasizing specific problems in space, time, dynamics, structure and imagery. Students will perform compositions for critical analysis and participate in the rehearsal and performance of their colleagues' compositions. Prerequisite: FPA 122, 123, 124 and 129 and interview.

### **FPA 227-3 History of Dance: From the 20th Century to the Present**

Study of the development of modern dance and the reformation of the ballet from the beginning of the 20th century to the present. Emphasis will be placed on seminal dance artists and the impact their work has had upon the art form in western theatre dance. Students with credit for FPA 328 may not take this course for further credit. Recommended: FPA 127. May be of particular interest to students in other departments.

### **FPA 228W-3 Dance Aesthetics**

An introduction to aesthetic theory as it applies to dance. Lectures will address, among other things, the nature of aesthetic experience, as well as issues pertaining to critical judgment, communication, taste, and high and low art. Prerequisite: students who completed selected topics course FPA 229 in Fall 2005 or Fall 2006 may not take this course for further credit. Writing.

### **FPA 229-3 Selected Topics in Dance I**

A specific topic in dance which is not otherwise covered in depth in regular courses. The work will be practical, theoretical, or a combination of the two, depending on the particular topic in a given term. Prerequisite: FPA 220 or prior approval.

### **FPA 230-5 Filmmaking II**

The first of two courses (FPA 231-5 is the second) which form an intensive study of the craft of sync-sound 16 mm. filmmaking, with an emphasis on production planning, creative development and the shooting and editing of short films. In-class exercises and film screenings will lead to the production of several original films. Each student will be expected to play major creative and technical roles in these productions. Prerequisite: FPA 131, one of FPA 136 or 137 or prior approval. Students should be advised that film production will probably incur significant costs in addition to lab fees. Students who have taken FPA 330 for credit may not take FPA 230 for further credit. Corequisite: FPA 233. A laboratory fee is required.

### **FPA 231-5 Filmmaking III**

This course continues the work begun in FPA 230-5 Filmmaking II. Students will acquire proficiency in film technique through lab exercises, readings and film screenings. As well, all students will participate in the completion of short original sync-sound 16 mm. films which were begun in FPA 230. Emphasis is placed on the development of means for creative expression supported by technical skills. Prerequisite: FPA 230, 233 and laboratory fee required. Students should be advised that film production will probably incur significant costs in addition to lab fees.

### **FPA 232-3 Film Sound**

Through lectures, demonstrations and studio work, students will be introduced to several aspects of location sound recording and audio post production for film and video. Topics will include synchronization systems and techniques, editing, music scoring, mixing and both analog and digital sound technology. Prerequisite: FPA 131 or 147 and prior approval. Students who have completed FPA 330 may not take FPA 232 for further credit. Recommended: CMNS 258.

### **FPA 233-2 The Techniques of Film**

Covers the technical aspects of basic 16 mm. production skills: camera, lighting, sound, editing, lab processes. Prerequisite: FPA 131 and prior approval. Laboratory fee required. Corequisite: FPA 230.

### **FPA 235-3 Experimental Film and Video**

A survey of the key works and ideas that have informed contemporary moving image art practice nationally and internationally. Beginning with antecedents in painting and photography, the course will move forward from the early European avant-garde to the lyrical and structural works of the seventies, the issue-based work of the eighties, and finally the gallery-based practices of the present day. Intended for all students with an interest in the moving image as an art form. Prerequisite: one of FPA 135, 136, 137, 167 or 168 or 30 units. Students who have taken FPA 289-3 in Spring 2006 or Spring 2007 under this title may not take this course for further credit.

### **FPA 236-3 Cinema in Canada**

Examines the achievements of dramatic, documentary and experimental filmmaking in Canada from the earliest days until the present. Special attention will be paid to the cinemas of Quebec and western Canada, and to the cultural, political and theoretical traditions that have shaped contemporary cinema in Canada. Prerequisite: FPA 136 or 137, or 30 units. May be of particular interest to students in other departments. Breadth-Humanities.

### **FPA 237-3 Selected Topics in Film and Video Studies**

This course will cover a specific topic within the field of film and video studies not covered in depth in regularly scheduled courses, such as: a national cinema; film and politics; Quebec cinema; documentary film and video, etc. Weekly sessions. The course may be repeated for credit if a different topic is taught. Prerequisite: FPA 136 or 137. Breadth-Humanities.

### **FPA 238-3 Screenwriting I**

This course introduces the methodologies of writing for the screen in various styles, including dramatic, documentary and experimental forms, with an emphasis on structure and the creative expression of visual ideas. Students will perform a variety of writing assignments and each will be expected to complete one or more short original scripts. Prerequisite: one of FPA 136, 137 or 253 and prior approval. Students who have taken FPA 332 for credit may not take FPA 238 for further credit.

### **FPA 238W-3 Screenwriting II**

This course introduces the methodologies of writing for the screen in various styles, including dramatic, documentary and experimental forms, with an emphasis on structure and the creative expression of visual ideas. Students will perform a variety of writing assignments and each will be expected to complete one or more short original scripts. Prerequisite: one of FPA 136, 137 or 253 and prior approval. Students who have taken FPA 332 for credit may not take FPA 238 for further credit. Writing.

### **FPA 240-3 Contemporary Music Performance I**

Performance of works from the contemporary music repertoire for instruments and voice. A range of material will be covered from more improvisational pieces to conventionally notated scores. Prerequisite: audition/interview.

### **FPA 243-3 Gamelan I**

Practical and theoretical study of music for gamelan ensemble, based on, but not limited to, traditional Javanese music. This course is designed as an introduction to the study of the music of non-Western cultures and as a method of developing ensemble musicianship. Prerequisite: prior approval. May be of particular interest to students in other departments.

**FPA 244-3 Theory of Contemporary Music**

The theoretical investigation of the basic materials of the tempered chromatic scale, alternative tuning systems, and contemporary practices of texture and rhythm. Analysis of a wide range of music, score-reading and exposure to recorded music will be part of the course. Prerequisite: FPA 140 and 145.

**FPA 245-3 Music Composition I**

Composition for small instrumental groups, electroacoustic resources or combinations of instruments and electronics. Students are also encouraged to do work involving collaboration with dance, film, theatre and visual art. In addition to individual composition lessons, students will be required to attend a composition seminar where the practice of composition will be discussed. Seminar topics will include orchestration, world repertoire, and issues of music technology. Prerequisite: FPA 145 and prior approval.

**FPA 246-3 Music Composition II**

This course is a continuation of FPA 245. Prerequisite: FPA 140, 245 and prior approval from the area.

**FPA 247-3 Electroacoustic Music I**

The theory and practice of electroacoustic music technology and composition. In addition to expanding upon the issues introduced in FPA 147, the course will examine through lecture and studio work the following topics: analog and digital synthesis, microcomputer use, the multi-track studio, signal processing, communication protocols such as MIDI and sampling techniques. Prerequisite: FPA 147. Quantitative.

**FPA 248-3 Conducting I**

Introduces basic elements of conducting technique including metrical patterns, quality of beat, cueing, score preparation, rehearsal technique, showing expression and dynamics, and score reading. The course is primarily designed for composers or prospective music teachers. Students will gain regular practical experience through conducting ensembles comprised of members of the class. Prerequisite: FPA 245 or prior approval. Students who have received credit for FPA 249-3 Selected Topics in Music I: Conducting I may not receive further credit for FPA 248.

**FPA 249-3 Selected Topics in Music I**

A specific topic in music which is not otherwise covered in-depth in regular courses. The work may be practical, theoretical or a combination of the two, depending on the particular topic in a given term. Prerequisite: FPA 140 and/or prior approval.

**FPA 250-3 Acting I**

Begins the concentrated work of training the actor in both the freedom and the control of voice and body. This is accomplished through: work on the self as a source of personal imagery and as a potential wellspring of characters, work with other actors in ensemble relationships, work on text as a blueprint for expression, scene study as a vehicle for the realization of the specific dramatic content and overall shape of a play. Prerequisite: prior to enrolment in this course, the student must pass a successful audition. Corequisite: FPA 254.

**FPA 251-3 Acting II**

Continues and expands upon the work undertaken in Acting I. Prerequisite: FPA 250 and 254. Corequisite: FPA 255.

**FPA 252-3 Playmaking I**

Introduces elements of playmaking such as self scripting, mask exploration, clowning and political theatre. The objective is to enable students to make their own theatre. Prerequisite: admission to FPA 250 or prior approval. Laboratory fee required.

**FPA 253-3 Playmaking II**

Expands the work undertaken in Playmaking I emphasizing writing skills and story structure. Prerequisite: FPA 150, 151 and prior approval.

**FPA 254-2 Theatre Laboratory I**

This is the first of four courses in performance research, each of which is 'attached' to one of the four courses: FPA 250, 251, 350 and 351. The work comprises voice and speech training. Prerequisite: prior approval. Corequisite: FPA 250 and 129.

**FPA 255-3 Theatre Laboratory II**

This is the second of four courses in performance research. The work comprises voice and speech training. Prerequisite: FPA 250 and 254. Corequisite: FPA 251.

**FPA 257-3 Context of Theatre I**

A conceptual approach to a selected body of dramatic work focussing on the detailed structural analysis of dramatic texts, their historical context, their development and production histories. Particular emphasis will be placed upon the evolving relationship between theatre and its audience. May be of particular interest to students in other departments.

**FPA 260-3 Studio in Visual Art I**

This course permits students to work extensively in a mature critical studio environment on a combination of freely chosen and assigned projects in various contemporary media. Reading will be required. Prerequisite: FPA 111, 161, 168 and prior approval. A course materials fee is required.

**FPA 261-3 Studio in Visual Art II**

Continues work done in FPA 260-3. Work will combine freely chosen and assigned projects in a variety of contemporary media. Readings will be required as an integral part of studio work. Prerequisite: FPA 260 and status as an approved visual art major. A course materials fee is required.

**FPA 262-3 Methods and Concepts:****Drawing-based Practices**

A studio course introducing drawing practices as they relate to practical, conceptual, aesthetic and historical issues in contemporary art. Prerequisite: FPA 161 and status as an approved major or extended minor in visual art. A course materials fee is required. Students will receive credit for either FPA 262 or 362, but not both.

**FPA 263-3 Methods and Concepts:****Painting-based Practices**

A studio course introducing painting practices as they relate to practical, conceptual, aesthetic and historical issues in contemporary art. Prerequisite: FPA 161 and status as an approved major or extended minor in visual art. A course materials fee is required. Students will receive credit for either FPA 263 or 363, but not both.

**FPA 264-3 Methods and Concepts: Sculptural Practices**

A studio course introducing sculptural practices as they relate to practical, conceptual, aesthetic and historical issues in contemporary art. Prerequisite: FPA 161 or 170. FPA 264 is identical to FPA 364 and students may not take both courses for credit. A course materials fee is required.

**FPA 265-3 Methods and Concepts:****Photo-based Practices**

A studio course introducing photographic practices as they relate to practical, conceptual, aesthetic and historical issues in contemporary art. Prerequisite: FPA 161 and status as an approved major or extended minor in visual art. A course materials fee is required. Students will receive credit for either FPA 265 or 365, but not both.

**FPA 268-3 Methods and Concepts: Spatial Presentation**

A studio course introducing spatial presentation practices as they relate to practical, conceptual, aesthetic and historical issues in contemporary art. Prerequisite: FPA 161 or 170. A course materials fee is required. Students can only receive credit for one of FPA 163, 268 or 368.

**FPA 269-3 Methods and Concepts: Selected Topics**

A studio course introducing topics in art-making practices as they relate to practical, conceptual, aesthetic and historical issues in contemporary art. This course may be taken more than once for credit under a different topic. Prerequisite: FPA 161 and status as an approved major or extended minor in visual art. A course materials fee is required.

**FPA 270-3 Production Ensemble I**

Students having a basic familiarity with elements of production and design participate in an in-depth theoretical and practical exploration of stage management, staging, audio and lighting for theatre, dance and music production. Students in this class will develop skills necessary to provide technical support for the School's productions. May be of particular interest to students in other departments. Prerequisite: FPA 170 or 171 or prior permission.

**FPA 271-3 Production Ensemble II**

Students having a basic familiarity with elements of production and design participate in an in-depth theoretical and practical exploration of stage management, staging, audio and lighting for theatre, dance and music production. Students in this class will develop skills necessary to provide technical support for the School's productions. May be of particular interest to students in other departments. Prerequisite: FPA 170 or FPA 171 or prior permission.

**FPA 272-3 Production Practicum I**

Provides students with the opportunity to learn and practise the technical and management skills and to take on the roles and responsibilities associated with creating a performing arts production. Individual assignments will vary according to the needs of the production season. Required of all second year production and design majors and extended minors. Fall term only. Prerequisite: FPA 170 or FPA 171 and prior approval. Corequisite: FPA 270 Production Ensemble I.

**FPA 273-3 Production Practicum II**

Provides students with the opportunity to learn and practise the technical and management skills and to take on the roles and responsibilities associated with creating a performing arts production. Individual assignments will vary according to the needs of the production season. Required of all second year production and design majors and extended minors. Spring term only. Prerequisite: FPA 170 or 171 or FPA 171(with STT in title) and prior approval. Corequisite: FPA 271-3 Production Ensemble II.

**FPA 289-3 Selected Topics in the Fine and Performing Arts**

A specific topic in fine and performing arts which is not otherwise covered in depth in regular courses and which is not appropriately placed within a single arts discipline. The work will be practical, theoretical, or a combination of the two, depending on the particular topic in a given term. Prerequisite: will vary according to the topic. May be of particular interest to students in other departments.

**FPA 290-3 Video Production I**

A hands-on introduction to the technical and aesthetic aspects of digital video production and post-production. Prerequisite: six units in FPA and prior approval. Laboratory fee required.



**FPA 305-3 Explorations in Contemporary Arts I**

Exploration of a disciplinary or interdisciplinary research topic with School for the Contemporary Arts faculty. Focuses on studio-based project(s), and attention will be paid to theoretical and historical contexts. Prerequisite: 60 units, including at least 30 units in FPA.

**FPA 308-4 Contemporary Arts Field School I (Theory/History)**

A scholarly exploration of artistic traditions and practices in the country being visited, with special attention to cultural, theoretical, historical and political contexts. Prerequisite: a minimum of 60 units and approval of Field School Director. Students with credit for FPA 289, 311, 329, 337, 388 or 389 offered under this topic may not take this course for further credit.

**FPA 309-4 Contemporary Arts Field School II (Studio)**

Students receive training in selected forms of dance, film, video, theatre, music, visual art and other forms of art production in the country being visited, with the opportunity of interacting with local people, artists and academics. Prerequisite: a minimum of 60 units and permission of Field School Director. Students with credit for FPA 289, 311, 329, 337, 388 or 389 offered under this topic may not take this course for further credit.

**FPA 310-4 Interdisciplinary Methods**

An examination of interdisciplinary methods that have been used to research the fine and performing arts. The course is an in-depth study of approaches to interdisciplinary research, including perceptual concerns, theoretical directions, contextual issues, and analytical processes. Prerequisite: FPA 210 and two of FPA 167, 168, 136, 137. Students who have taken FPA 310-5 prior to 1999-2 may take this course for further credit.

**FPA 311-4 Interdisciplinary Studies in the Arts**

An historical, theoretical or thematic topic in the fine and performing arts presenting an in-depth investigation of interdisciplinary approaches to the study of art and culture. Prerequisite: 45 units including six units in history or theory courses within the School for the Contemporary Arts. The course may be repeated when different topics are offered. Recommended: FPA 210.

**FPA 312-3 Intermediate Seminar in Art and Culture**

Investigates a selected thematic topic in art and culture studies, for example, postcolonial theory and the arts; perception and embodiment; art activism and resistance; or urban art and culture. Prerequisite: will vary according to the topic. Students who have taken FPA 312-5 prior to 1999-2 may take this course for further credit.

**FPA 313-5 Arts, Audience, Patronage, Institutions**

An investigation of the fine and performing arts, their audiences, patronage and institutions in a specific historical context. Students will gain an in-depth understanding of a selection of art works and their relationship to their specific cultural context. Prerequisite: 45 units which must include six units in the history or theory of the fine or performing arts. The course may be repeated when different topics are offered. Students who have completed FPA 313 prior to 1998 may take this course for further credit only if the topic differs from the former course. Recommended: FPA 210.

**FPA 314-3 Readings in the History of Art and Culture**

Investigates a selected historical topic in art and culture. Prerequisite: will vary according to the topic. Students who have taken FPA 314-5 prior to 1999-2 may take this course for further credit.

**FPA 319W-3 Critical Writing in the Arts**

Examines aspects of critical writing associated with the fine and performing arts and encourages students to participate as writers in the artistic and cultural debates of their day. Forms examined will include but not be limited to reviews, articles, descriptive synopses for exhibition and festival programs, curatorial essays, project proposals and artists' statements. Prerequisite: 60 units including at least six units in FPA history/theory courses. Writing.

**FPA 320-4 Contemporary Dance V**

The first of four upper division courses which build upon the movement vocabulary of contemporary dance. Prerequisite: FPA 221.

**FPA 321-4 Contemporary Dance VI**

Continues and expands upon the work undertaken in FPA 320. Prerequisite: FPA 320.

**FPA 322-3 Ballet I**

Explores the vocabulary and movement range of classical ballet technique at the intermediate level. Further attention will be given to the understanding of body placement, balance, flexibility and strength. Practical studio experience is offered within the context of specific theoretical principles. Prerequisite: acceptance into the dance major or extended minor program, or prior approval.

**FPA 323-3 Ballet II**

Continuation of FPA 322, with an emphasis on expanding the vocabulary and movement range of classical ballet technique at the intermediate level. Further attention will be given to the understanding of body placement, balance, flexibility and strength. Practical studio experience is offered within the context of specific theoretical principles. Prerequisite: FPA 322, or prior approval.

**FPA 324-3 New Dance Composition**

Students will be introduced to traditional choreographic structures and explore new directions in composition. Emphasis will be on the creation and analysis of work generated by extending the parameters of source, style and form in contemporary dance. Prerequisite: FPA 124, plus one of 224, 230, 240, 245, 252, 253 or 260.

**FPA 325-3 Special Project in Dance Composition**

A specific topic or set of ideas will form the basis for choreographic exploration. Students will create one or more works and participate in research and critical analysis, depending on the particular topic in a given term. Prerequisite: 40 units in FPA courses.

**FPA 326-4 Repertory I**

One of two courses which provide advanced level dance students the opportunity to work as an ensemble rehearsing and preparing for a series of public performances. Choreography will be created and/or selected by a faculty director. Prerequisite: acceptance into the dance major or extended minor, and prior approval. Corequisite: students must be concurrently enrolled in a technique course at an appropriate level.

**FPA 327-4 Repertory II**

One of two courses which provide advanced level dance students with the opportunity to work as an ensemble rehearsing and preparing for a series of public performances. Choreography will be created and/or selected by a faculty director. Prerequisite: acceptance into the dance major or extended minor and prior approval. Corequisite: students must be concurrently enrolled in a technique course at an appropriate level.

**FPA 329-3 Selected Topics in Dance II**

A specific topic in dance which is not otherwise covered in depth in regular courses. The work will be practical, theoretical or a combination of the two, depending on the particular topic in a given term. Prerequisite: FPA 221 or prior approval.

**FPA 332-3 Film Production Seminar**

Facilitates an in-depth understanding of the organizational aspects of film production, with emphasis on pre-production planning. The class will study methods of proposal writing, pre-production and production, developing production packages for short film and video projects. This course is strongly recommended for all students intending to take FPA 430. Prerequisite: FPA 231 or prior approval.

**FPA 333-3 Cinematography and Lighting**

This course emphasizes advanced 16 mm. production skills in cinematography and lighting. Students are expected to participate in intensive camera exercises, as well as to play significant crew roles on fourth year films. Prerequisite: FPA 231 and prior approval. Students who have taken FPA 331 The Crafts of Film III may not take this course for further credit. Laboratory fee required.

**FPA 335-4 Introduction to Film Theory**

This course is concerned with the systematic understanding of the general phenomenon called Cinema rather than with the properties or techniques of individual films. Various theoretical positions will be assessed and compared in terms of cinematic practice and its ideological functions. Prerequisite: six units from among FPA 136, 137, 211, 236, 237. Students who have taken FPA 234 for credit may not take FPA 335 for further credit. Recommended: FPA 210. May be of particular interest to students in other departments.

**FPA 337-3 Intermediate Selected Topics in Film and Video Studies**

An intermediate course in critical studies, addressing a variety of topics under this number; for instance, specific genre or area studies (comedy, film noir, science fiction, etc.); national cinemas; film analysis; Third World film, video art, experimental film, etc. The course may be taken again for credit if the topic changes. Prerequisite: will vary according to subject matter. Students who have taken FPA 339 Selected Topics in Film for credit may not take the same topic under FPA 337 for further credit.

**FPA 338-3 Screenwriting II**

This course will present advanced theory and techniques for writing dramatic, experimental and documentary film and video scripts. Additional topics covered include script analysis, production breakdown, and the writing of treatments and proposals. Prerequisite: one of FPA 238 or 353 or 457 and prior approval. Recommended: strongly recommended for all students developing projects for production in FPA 430.

**FPA 338W-3 Screenwriting II**

This course will present advanced theory and techniques for writing dramatic, experimental and documentary film and video scripts. Additional topics covered include script analysis, production breakdown, and the writing of treatments and proposals. Prerequisite: one of FPA 238 or 353 or 457 and prior approval. Recommended: strongly recommended for all students developing projects for production in FPA 430. Writing.

**FPA 339-3 Directing and Acting for Film and Video**

This course acquaints intermediate level students in film, video and theatre with techniques of dramatic film performance. Students will be expected to perform as both actors and directors on scene work in class. Topics covered include auditioning, script analysis, role preparation, rehearsal, blocking for the camera, and directing techniques. Prerequisite: FPA 131 or 151 and prior approval. Students who have completed Directing and Acting for Film as FPA 379 in spring 1990 or earlier, may not take this course for further credit. This course is not a duplicate of FPA 339 Selected Topics in Film, available in summer 1990 and earlier.

**FPA 340-3 Contemporary Music Performance II**  
A continuation of FPA 240. Prerequisite: FPA 240.

#### **FPA 341-3 World Music**

The relationship of music and culture, with emphasis on traditional and contemporary music in Asia, Africa, the Middle East, Latin America and the Caribbean, and indigenous cultures of North America. Specific cultural areas may be selected for intensive study in any particular term. Prerequisite: 45 units. May be of particular interest to students in other departments.

#### **FPA 343-3 Gamelan II**

Continuation of FPA 243, with increased emphasis on the theoretical and ethnomusicological aspects of gamelan. Prerequisite: FPA 243.

#### **FPA 344-3 Contemporary Music Analysis and Criticism**

An in-depth investigation of selected social, critical and theoretical issues associated with contemporary music, with special emphasis on the period c. 1945 to the present. Issues discussed might include such theoretical concerns as integral serialism; indeterminacy; process music; timbral concerns; or new approaches to melody, harmony and tonality. Critical topics such as music and technology; popular music and the mass media; or critical issues connected with world music might also be considered. The material of the course will be presented through the study of scores, recorded examples and when possible, live concerts. Prerequisite: FPA 244.

#### **FPA 345-3 Music Composition III**

This course is a continuation of FPA 246. Prerequisite: FPA 246 or 247, and prior approval.

#### **FPA 346-3 Music Composition IV**

This course is a continuation of FPA 345. Prerequisite: FPA 345.

#### **FPA 347-3 Electroacoustic Music II**

An advanced examination of the aesthetics, technology, and compositional approaches of electroacoustic music. Topics may include computer music programming, performance systems, compositional strategies and their relationship to technology, synthesis and processing techniques and the analysis of works. Prerequisite: FPA 247. Students with credit for FPA 347 under its former title may take this course for further credit.

#### **FPA 348-3 Conducting II**

Continuation of FPA 248, with an increased emphasis on more advanced conducting projects. Prerequisite: FPA 248 or FPA 249-3 Selected Topics in Music I: Conducting I. Students who have received credit for FPA 349-3 Selected Topics in Music II: Conducting II may not receive further credit for FPA 348.

#### **FPA 349-3 Selected Topics in Music II**

A specific topic in music which is not otherwise covered in depth in regular courses. The work may be practical, theoretical or a combination of the two, depending on the particular topic in a given term. Prerequisite: FPA 245 and/or prior approval. (Prerequisite may vary according to the topic.)

#### **FPA 350-3 Acting III**

Continues and expands work undertaken in FPA 250 and 251, with an increased emphasis on work with established texts. Prerequisite: FPA 251 and 255. Corequisite: FPA 354.

#### **FPA 351-3 Acting IV**

Continues and expands on the work undertaken in Acting III. Prerequisite: FPA 350 and 354. Corequisite: FPA 355.

#### **FPA 352-3 Playmaking III**

Continues the development of playmaking research through intensive studio work consisting of the deconstruction or adaptation of a major dramatic text. Provides the basis for a public presentation in the subsequent term. Prerequisite: FPA 251 and 255.

#### **FPA 353-3 Playmaking IV**

Black Box Theatre. Students will continue playmaking research through the creation of an ensemble season in a series of public presentations. Prerequisite: second year standing in a studio discipline and prior approval from the instructor. May be repeated for credit if course content is different.

#### **FPA 354-2 Theatre Laboratory III**

This is the third of four courses in performance research comprising voice and speech training. Prerequisite: FPA 251, 255. Corequisite: FPA 350.

#### **FPA 355-2 Theatre Laboratory IV**

This is the fourth of four courses in performance research, comprising voice and speech training. Prerequisite: FPA 350, 354. Co-requisite: FPA 351.

#### **FPA 357-3 Context of Theatre II**

A conceptual approach to a selected body of dramatic work. The detailed structural analysis of dramatic texts, their historical context, their development and production histories. Particular emphasis will be placed upon the evolving relationship between theatre and its audience. Prerequisite: 24 lower division units or prior approval. May be of particular interest to students in other departments.

#### **FPA 359-3 Selected Topics in Theatre**

A specific topic in theatre which is not otherwise covered in-depth in regular courses. The work may be practical, theoretical or a combination of the two, depending on the particular topic in a given term. Prerequisite: FPA 250 and/or prior approval.

#### **FPA 360-3 Studio in Visual Art III**

An open critical studio course. Students are required to have a program of work prepared at the beginning of the term. This program will constitute the basis of the student's work in the course, and will be the subject of continuing critical discussion. This discussion will be integrated with theoretical studies in the parallel seminar course, FPA 366. Those students who have satisfactorily completed the lower division requirements for the major may apply for entry into the third year studio/seminar stream. Admission is by portfolio assessment and course achievement review in the spring term before third year. Prerequisite: FPA 167, 168, 210, and prior approval. A course materials fee is required. Corequisite: FPA 366.

#### **FPA 361-3 Studio in Visual Art IV**

An open critical studio course. It will continue and extend work done in FPA 360. Students are required to have a program of work prepared at the beginning of the term. This program will form the basis of the student's work in the course, and will be the subject of continuing critical discussion. This discussion will be integrated with theoretical studies in the parallel seminar course, FPA 367. Prerequisite: FPA 360 and 366. Corequisite: FPA 367. A course materials fee is required.

#### **FPA 362-3 Methods and Concepts:**

##### **Drawing-based Practices**

Presents drawing practices as they relate to practical, conceptual, aesthetic and historical issues in contemporary art. Additional assignments will be required for students taking the course at this level. Prerequisite: FPA 161 and status as an approved major or extended minor in visual art. A course materials fee is required. Students will receive credit for either FPA 262 or 362, but not both.

#### **FPA 363-3 Methods and Concepts: Painting Practices**

Presents painting practices as they relate to practical, conceptual, aesthetic and historical issues in contemporary art. Additional assignments will be required for students taking the course at this level. (studio) Prerequisite: FPA 161 and status as an approved major or extended minor in visual art. A course materials fee is required. Students will receive credit for either FPA 263 or 363, but not both.

#### **FPA 364-3 Methods and Concepts: Sculptural Practices**

Presents sculptural practices as they relate to practical, conceptual, aesthetic and historical issues in contemporary art. Additional assignments will be required for students taking the course at this level. Prerequisite: FPA 161 and status as an approved major or extended minor in visual art. A course materials fee is required. Students will receive credit for one of FPA 264, 170, or 364.

#### **FPA 365-3 Methods and Concepts: Photo-based Practices**

Presents photo-based practices as they relate to practical, conceptual, aesthetic and historical issues in contemporary art. Additional assignments will be required for students taking the course at this level. Prerequisite: FPA 161 and status as an approved major or extended minor in visual art. A course materials fee is required. Students will receive credit for either FPA 265 or 365, but not both.

#### **FPA 366-3 Seminar in Visual Art I**

A seminar course to be taken by all students in FPA 360. It deals with visual art topics of an historical, critical and theoretical nature which concern practising artists in the contemporary context. Students will be required to present research papers. Each research subject will be studied in connection with the student's own artistic work. Senior students in other disciplines with appropriate background may request approval to take this course. Those students who have satisfactorily completed the lower division requirements for the major may apply for entry into the third year studio/seminar stream. Admission is by portfolio assessment and course achievement review in the spring term before third year. Prerequisite: FPA 167, 168, 210, and prior approval. Corequisite: FPA 360.

#### **FPA 367-3 Seminar in Visual Art II**

A seminar course to be taken by all students in FPA 361. It deals with visual arts topics of an historical, critical and theoretical nature which concern practising artists in the contemporary context. Students will be required to present research papers. Each research subject will be studied in connection with the student's own artistic work. Senior students in other disciplines with appropriate background may request approval to take this course. Prerequisite: FPA 366. Visual art major students transferring into third year may request approval to take FPA 211 concurrently. Corequisite: FPA 361.

#### **FPA 368-3 Methods and Concepts: Spatial Presentation**

A studio course introducing spatial presentation practices as they relate to practical, conceptual, aesthetic and historical issues in contemporary art. Prerequisite: FPA 161 or 170. Students can receive credit for only one of FPA 163, 268 or 368. A course materials fee is required.

#### **FPA 369-3 Methods and Concepts: Selected Topics**

A studio course presenting topics in art-making practices as they relate to practical, conceptual, aesthetic and historical issues in contemporary art. This course may be taken more than once for credit under a different topic. Prerequisite: FPA 161 and status as an approved major or extended minor in visual art. A course materials fee is required.

#### **FPA 370-3 Production Ensemble III**

Provides students with training and an historical and contemporary context for their related practicum roles as production heads and stage management and design personnel. Issues will be drawn from the School's current production season and from national and international forums in related fields. Prerequisite: FPA 270 and 271 or prior approval. Students who received credit for FPA 372 prior to 2005 may not take FPA 370 for further credit.

**FPA 371-3 Production Ensemble IV**

Provides students with training and an historical and contemporary context for their related practicum roles as production heads and stage management and design personnel. Issues will be drawn from the School's current production season and from national and international forums in related fields.

Prerequisite: FPA 270 and 271 or prior approval. Students who received credit for FPA 373 (Technical Production II) prior to 2005 may not take FPA 371 for further credit.

**FPA 372-3 Production Practicum III**

Provides students with the opportunity to learn and practise the technical and management skills and to take on the roles and responsibilities associated with creating a performing arts production. Individual assignments will vary according to the needs of the production season. Required of all upper division production and design majors and extended minors working in production and design. Students can expect to devote approximately 150 hours to their FPA 372 production practicum assignments.

Prerequisite: FPA 272 and 273, and prior approval.

**FPA 373-3 Production Practicum IV**

Provides students with the opportunity to learn and practise the technical and management skills and to take on the roles and responsibilities associated with creating a performing arts production. Individual assignments will vary according to the needs of the production season. Required of all upper division production and design majors and extended minors working in production and design. Students can expect to devote approximately 150 hours to their FPA 373 production practicum assignments.

Prerequisite: FPA 272 and 273, or FPA 272 (with STT title) and FPA 273, and prior approval.

**FPA 374-3 Stage Lighting**

Explores contemporary stage lighting for theatre, dance and opera. Participants will review the principles of theatrical lighting instruments and control systems and will experiment with the components of lighting design in a variety of studio projects. This course will require a practicum in an actual performance. Prerequisite: FPA 270 or FPA 271 or prior approval. Students with credit for FPA 371 prior to 2005 may not take FPA 374 for further credit. Laboratory fee required.

**FPA 375-3 Stage Design**

Explores the numerous complex processes and practices needed to create two and three dimensional designs for stage and performance. Students will engage in a series of creative projects, research, analysis and presentations to enable them to develop and realize their design solutions. Prerequisite: FPA 270 or FPA 271 or prior approval. Students with credit for FPA 370 prior to 2005 may not take FPA 375 for further credit. Laboratory fee required.

**FPA 387-3 Digital Art**

Focuses on digital technology and its impact on contemporary art. Explores the history and practice of digital art through the creation of artworks in which the compute is intimately involved from inception through to realization. Prerequisite: FPA 347, or CMNS 358, or permission of the instructor. Students with credit for FPA 389 offered under this topic may not take this course for further credit.

**FPA 389-3 Selected Topics in the Fine and Performing Arts II**

A specific topic in fine and performing arts which is not otherwise covered in depth in regular courses and which is not appropriately placed within a single arts discipline. The work will be practical, theoretical, or a combination of the two, depending on the particular topic in a given term. Prerequisite: will vary with the topic. May be of particular interest to students in other departments.

**FPA 390-3 Video Production II**

This course is intended for students interested in video as a means of artistic expression. Students will be encouraged to challenge accepted notions of the video medium and explore the creative possibilities of multi channel presentations. The course comprises a series of technical workshops, screenings and group seminars whose purpose is to develop an awareness of the creative and conceptual possibilities of the medium of video. Students will be expected to initiate and complete a short video project based on an idea of their own choosing. Projects which involve school-wide interdisciplinary collaborations will be encouraged. Prerequisite: prior approval through written proposal for a ten minute video project or installation; an interview; plus FPA 290 or equivalent video experience. A laboratory fee is required. Students should be advised that video production may require personal funding beyond the lab fee.

**FPA 400-3 Directed Studies (Studio)**

An opportunity for advanced students to carry out an independent project which is planned and completed in close consultation with the supervisory instructor. Before enrolment, the student must submit a written proposal outlining the project in detail to the chosen supervisor for approval. Directed studies courses may not be used as a substitute for existing courses. Prerequisite: 60 units plus a minimum standing of completion of second year in any of the programs offered in the School for the Contemporary Arts and prior approval.

**FPA 401-3 Directed Studies (Theory/History)**

This course is intended to provide opportunity for advanced students to carry out an independent project which is planned and completed in close consultation with the supervisory instructor. Before enrolment, the student must submit a written proposal outlining the project in detail to the chosen supervisor for approval. Directed studies courses may not be used as a substitute for existing courses. Prerequisite: 60 units plus a minimum standing of completion of second year in any of the programs offered in the School for the Contemporary Arts and prior approval.

**FPA 402-4 Directed Studies (Studio)**

Provides an opportunity for advanced students to carry out an independent project which is planned and completed in close consultation with the supervisory instructor. Before enrolment, the student must submit a written proposal outlining the project in detail to the chosen supervisor for approval. Directed studies courses may not be used as a substitute for existing courses. Prerequisite: 60 units plus a minimum standing of completion of second year in any of the programs offered in the School for the Contemporary Arts and prior approval.

**FPA 403-4 Directed Studies (Theory/History)**

This course is intended to provide opportunity for advanced students to carry out an independent project which is planned and completed in close consultation with the supervisory instructor. Before enrolment, the student must submit a written proposal outlining the project in detail to the chosen supervisor for approval. Directed studies courses may not be used as a substitute for existing courses. Prerequisite: 60 units plus completion of second year in any of the programs offered in the School for the Contemporary Arts and prior approval.

**FPA 404-5 Directed Studies (Studio)**

Provides an opportunity for advanced students to carry out an independent project which is planned and completed in close consultation with the supervisory instructor. Before enrolment, the student must submit a written proposal outlining the project in detail to the chosen supervisor for approval. Directed studies courses may not be used as a substitute for existing courses. Prerequisite: 60 units plus a

minimum standing of completion of second year in any of the programs offered in the School for the Contemporary Arts and prior approval.

**FPA 405-5 Explorations in Contemporary Arts II**

Exploration of a disciplinary or interdisciplinary research topic with School for the Contemporary Arts faculty. Focuses on studio-based project(s), and attention will be paid to theoretical and historical contexts. Prerequisite: 60 units, including at least 36 units in FPA. Students with credit for FPA 389 under this topic may not take this course for further credit.

**FPA 408-4 Contemporary Arts Field School III (Theory/History)**

A scholarly exploration of artistic traditions and practices in the country being visited, with special attention to cultural, theoretical, historical and political contexts. Prerequisite: a minimum of 60 units and approval of Field School Director. Students with credit for FPA 289, 311, 329, 337, 388 or 389 offered under this topic may not take this course for further credit.

**FPA 409-4 Contemporary Arts Field School IV (Studio)**

Students receive training in selected forms of dance, film, video, theatre, music, visual art and other forms of art production in the country being visited, with the opportunity of interacting with local people, artists and academics. Prerequisite: a minimum of 60 units and approval of Field School Director. Students with credit for FPA 289, 311, 329, 337, 388 or 389 offered under this topic may not take this course for further credit.

**FPA 411-3 Interdisciplinary Studies in the Contemporary Arts**

An interdisciplinary investigation of key issues in the contemporary arts. Prerequisite: At least 55 units, which must include FPA 210 and one of FPA 310 or 311.

**FPA 412-4 Advanced Seminar in Art and Culture Studies**

Provides an in-depth investigation of a selected theoretical, historical or thematic topic in art and culture studies. This course requires independent research leading to a substantial paper, as well as directed reading preparation for seminars. Topics will vary from term to term. The course may be repeated when different topics are offered. Prerequisite: eight upper division units and FPA 210. May be of particular interest to students in other departments.

**FPA 414-3 Advanced Topic in the History of Art and Culture**

An in-depth investigation of a selected topic in the history of art and culture. Prerequisite: will vary according to the topic.

**FPA 416-3 Practices in Art and Culture**

Investigates specific practices in art and culture, and combines work on a project with theoretical and historical research. The course will focus on the history, theory, and practices of, for example, curating, writing, or making audio-visual artworks. Prerequisite: will vary according to the topic.

**FPA 420-4 Contemporary Dance VII**

The third of four upper division courses which build upon the movement vocabulary of contemporary dance. Prerequisite: FPA 321.

**FPA 421-4 Contemporary Dance VIII**

Continues and expands the work undertaken in FPA 420. Prerequisite: FPA 420.

**FPA 425-4 Intensive Studies in Performance**

Advanced performance studies in intensive specialized workshops and/or participation in choreographic projects culminating in public performance. Course content may include interdisciplinary collaborations and a variety of performance styles and techniques. Prerequisite: FPA 326 or 327 with prior approval by application.

Students must be concurrently enrolled in a dance technique course at the appropriate level.

### **FPA 426-3 Dance/Movement Analysis**

An introduction into the theory and practice of movement analysis based on recognized theories of analysis. Experiential work may be included in the course and a dance or similar movement background is necessary. Prerequisite: FPA 124 or 151 or prior approval.

### **FPA 427-3 Ballet III**

An extension of classical ballet technique on an upper intermediate level. Understanding of basic principles is assumed and attention will be focused on combinations of movement, musicality and performance. Prerequisite: FPA 323, or prior approval.

### **FPA 428-3 Ballet IV**

An advanced course. Students must have a thorough background in the vocabulary and techniques of classical ballet. Attention will be given to movement sequences from the ballet repertoire. Prerequisite: FPA 427, or prior approval.

### **FPA 430-5 Filmmaking IV**

The first half of a two term project in advanced film and/or video production. Students are expected to participate in the realization of one or more projects during the two terms. Students seeking entry into this course are required to present a completed script (for a drama) or detailed proposal (for a documentary or experimental film) prior to enrolment. The exact nature of each student's participation will be determined in consultation with the instructor. Prerequisite: FPA 231 and 10 units in film or video studies plus prior approval. This course is open only to approved film majors. Students should be advised that film production will probably incur significant financial costs in addition to required lab fees.

### **FPA 432-5 Filmmaking V**

This course is intended for completion of film and video projects begun in FPA 430. Particular emphasis will be given to advanced film craft in the post-production phase. The exact nature of each student's participation will be determined in consultation with the instructor. Prerequisite: FPA 430. A laboratory fee is required. Students should be advised that film production will probably incur significant costs in addition to lab fees.

### **FPA 436-3 Advanced Seminar in Film and Video Studies**

This course features intensive study and analysis of selected topics in film theory, history, criticism and aesthetics. Examples include: work of specific directors or periods; theories of narrativity; ideological analysis; particular aspects of national cinemas, etc. is taught. Prerequisite: FPA 335 or permission of instructor.

### **FPA 443-3 Gamelan III**

Continuation of FPA 343 with emphasis on the technique of the elaborating instruments of the gamelan ensemble. Prerequisite: FPA 343.

### **FPA 445-3 Music Composition V**

This course is a continuation of FPA 346. Prerequisite: FPA 346.

### **FPA 446-5 Senior Project in Music Composition**

Students will undertake a large-scale project in music composition as the culmination of their undergraduate composition studies. Prerequisite: FPA 445.

### **FPA 447-3 Computer Music Composition**

The theory and practice of digital techniques and computer systems as applied to sound synthesis and music composition. The course will consider the major types of hardware and software systems developed for music from 1955 to the present, and will discuss such issues as machine programmability,

user interaction, acoustic models for sound synthesis, and compositional algorithms. Students will have the opportunity for practical compositional work.

Prerequisite: FPA 347. Recommended: CMPT 001 or 110. Quantitative.

### **FPA 450-3 Advanced Studio Skills**

A course in public performance, with the option of focusing on other advanced studio skills. Integrates and implements the techniques acquired in the earlier studios. Prerequisite: prior approval from the instructor or audition. May be repeated for credit if course content is different.

### **FPA 453-3 Theory and Practice of Directing**

A course in the fundamentals of directing leading to public performance of student directed projects. Allows the option of public performance with a professional director. Integrates and implements the techniques acquired in the earlier studios.

Prerequisite: FPA 150, 151, and prior approval from the instructor. May be repeated for credit if course content is different.

### **FPA 457-3 Context of Theatre III**

An analytical approach to a selected body of dramatic work. Course content includes an intensive consideration of practical dramatic techniques such as story structure and dramaturgy. Prerequisite: 45 units and prior approval from the instructor. May be repeated for credit if course content is different.

### **FPA 460-3 Studio in Visual Art V**

This course permits students to work in an open studio situation. Students propose an independent program of work in the media of their choice at the beginning of the term and develop it in critical dialogue with the instructor(s). Prerequisite: FPA 361, 367 and status as an approved major in visual art. A course materials fee is required.

### **FPA 461-5 Studio in Visual Art VI**

Permits students completing the visual art major to work in an open and critical studio situation. Students continue to develop a body of work begun in FPA 460 for their graduating exhibition at the end of the term. Preparation and installation of the exhibition is part of the course requirement. Prerequisite: FPA 460 and status as an approved major in visual art. A course materials fee is required.

### **FPA 470-3 Production Ensemble V**

Provides senior students with training and an historical and contemporary context for their related practicum roles as production heads and stage management and design personnel. Issues will be drawn from the School's current production season and from national and international forums in related fields. Prerequisite: FPA 370 or 371 and prior approval.

### **FPA 471-3 Production Ensemble VI**

Provides senior students with training and an historical and contemporary context for their related practicum roles as production heads and stage management and design personnel. Issues will be drawn from the School's current production season and from national and international forums in related fields. Prerequisite: FPA 370 or 371 and prior approval.

### **FPA 472-3 Production Practicum V**

Provides students with the opportunity to learn and practise the technical and management skills and to take on the roles and responsibilities associated with creating a performing arts production. Individual assignments will vary according to the needs of the production season. Required of all upper division production and design majors and extended minors working in production and design. Students can expect to devote approximately 150 hours to their FPA 472 production practicum assignments. Prerequisite: FPA 372 or 373 and prior approval.

### **FPA 473-6 Production Practicum VI**

Provides students with the opportunity to learn and practise the technical and management skills and to take on senior roles and responsibilities associated with creating a performing arts production. Individual assignments will vary according to the needs of the production season. Students can expect to devote approximately 250 hours to their FPA 473 production practicum assignments. Prerequisite: one of FPA 372, FPA 372 (with STT title), FPA 373, FPA 472, FPA 472 (with STT title) and prior approval.

### **FPA 489-5 Interdisciplinary Project in FPA**

This course permits students to explore the relationships among the arts by undertaking creative projects involving more than one art form. Students will work under the close supervision of one or more faculty and will be required to discuss their work on a regular basis with others involved in the course. Prerequisite: will vary according to the topic.

### **FPA 811-5 Interdisciplinary Graduate Seminar I**

Critical study of contemporary issues in the fine and performing arts, with emphasis on concerns common to diverse artistic disciplines and the interaction between art and society.

### **FPA 812-5 Interdisciplinary Graduate Seminar II**

Continuation of FPA 811. Prerequisite: FPA 811.

### **FPA 813-5 Interdisciplinary Graduate Studio**

A selected topics studio course with an emphasis on interdisciplinary artistic projects. Prerequisite: FPA 811 or 812.

### **FPA 877-5 Selected Topics in Fine and Performing Arts**

Study of particular artistic techniques or issues. The topic varies from term to term.

### **FPA 883-5 Studio in Fine and Performing Arts I**

Intensive studio work, concentrated in a particular art discipline, but with opportunity to involve interdisciplinary materials and techniques.

### **FPA 885-5 Studio in Fine and Performing Arts II**

Continuation of FPA 883. Prerequisite: FPA 883.

### **FPA 887-5 Selected Topics in Fine and Performing Arts**

Study of particular artistic techniques or issues. The topic varies from term to term.

### **FPA 889-5 Directed Study in Fine and Performing Arts**

### **FPA 898-10 Master of Fine Arts Graduating Project**

## **Criminology CRIM Faculty of Arts and Social Sciences**

### **CRIM 101-3 Introduction to Criminology**

Topics will include: examination of different terms and concepts commonly used in criminology, such as crime, delinquency, deviance, criminal, victim, rehabilitation and treatment. Criminology as a body of knowledge and as a profession. Position and subject matter of criminology. Relationship between criminology and other academic disciplines. Specificity of criminology. Relationship between theory and practice. History and evolution of criminological thought. Elements of continuity and discontinuity between classical and modern theories of criminality. Levels of explanations in criminology. Practical applications of criminology. The foundations of a modern criminal policy. Breadth-Social Sciences.

### **CRIM 103-3 Psychological Explanations of Criminal and Deviant Behavior**

An introduction to, and critical examination of, biogenetic, psychiatric, and psychological explanations of criminal and deviant behavior. Special

attention will be given to the hypothesized links between criminality and genetics, physiology, the endocrine system, mental disorders, personality, moral development, and other forms of social learning. Recommended: PSYC 100 and 102. Breadth-Social Sciences

### **CRIM 104-3 Sociological Explanations of Criminal and Deviant Behavior**

A survey of some major sociological perspectives on crime and deviance that will include both mainstream and critical theories. These will include: anomie, neutralization, control, group conflict, sub-cultural, ecological, functionalist and critical theories. Critical analysis of the assumptions upon which each theory is based. Examination of the similarities and differences between/among the various explanations. Recommended: SA 150. Breadth-Social Sciences

### **CRIM 131-3 Introduction to the Criminal Justice System – A Total System Approach**

Introductory analysis of the structure and operation of the Canadian criminal justice system. Examination of the patterns of crime and victimization; police operations, discretion and decision making; the criminal courts, including sentencing; the corrections system, including correctional institutions and community-based models; the youth justice system. Patterns of contact and conflict between various social groups and the criminal justice system. Breadth-Social Sciences.

### **CRIM 135-3 Introduction to Canadian Law and Legal Institutions: A Criminal Justice Perspective**

A general introduction to the fundamental and competing principles of jurisprudence and to the basic legal institutions of Canada. Prepares students for those law and law related courses offered within the School of Criminology and will consider the history of Canadian law, the development of the Canadian constitution, the system of Canadian courts and the roles and responsibilities of members of the legal profession. In addition, the course will consider the nature of legal reasoning, the doctrine of precedent, principles of statutory interpretation and will also introduce the fields of contract, torts, administrative law, and family law. Also examines the process of law reform in Canada. Breadth-Social Sciences.

### **CRIM 161-3 Practicum I**

First term of work experience in the Criminology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: 30 units (at least fifteen completed at Simon Fraser University) including CRIM 101, 220, 131, 135 and one of PSYC 210, STAT 101 or 203, with a cumulative grade point average of not less than 2.75. Students should apply to the Faculty of Arts co-op co-ordinator one term in advance.

### **CRIM 203-3 Historical Reactions to Crime and Deviance**

Historical review of society's reaction to crime and deviance, relating this history to religious, political, social and philosophical movements and schools of thought. Consideration of the history and evolution of punishment and penal methods and the historical forces influencing the development, implementation, and modification of these methods. Prerequisite: any 100 division CRIM course.

### **CRIM 210-3 Law, Youth and Young Offenders**

An analysis of the definition and control of youthful misconduct in an historical and contemporary context. Attention is focused upon: the social construction of 'juvenile delinquency', the decline of the concept, and the emergence of the concept of the 'young offender'; the Young Offenders Act and related legislation; the growth of the welfare state and the role of social workers in 'policing' youth and families; explanations for the criminal behavior of young persons; state and

private sector programs designed to deal with such behavior. Prerequisite: any 100 division CRIM course.

### **CRIM 213-3 Women and Criminal Justice**

This course offers an historical and analytical overview of women and crime, taking into account the role of gender in both criminality and social responses to crime. Specific emphasis will be given to feminist theories. Attention will focus on the specific crimes and patterns of control and punishment. Prerequisite: any 100 division CRIM course.

### **CRIM 220-3 Research Methods in Criminology**

An introduction to criminological research that is intended to develop the student's research and analytical skills. Specifically, the course will focus on the theory of inquiry, the logic, and structure of criminological inquiry, research design, data gathering, analysis and reporting. Students with credit for CRIM 120 may not take CRIM 220 for further credit. Recommended: any 100 division CRIM course. Quantitative.

### **CRIM 230-3 Criminal Law**

Nature, purpose, scope, sources and basic principles of the criminal law. Study of certain fundamental legal concepts such as mens rea, negligence and strict liability. Analysis of the concept of criminal responsibility in Canada. Critical examination of the legislative policies expressed in the Criminal Code. Study of the basic elements of a criminal offence. Examination of the legal principles relating to certain specific crimes and to certain major defences. Impact of Canadian Charter of Rights and Freedoms on the criminal law. Prerequisite: CRIM 135.

### **CRIM 241-3 Introduction to Corrections**

An examination of the organization, structure and operation of contemporary Canadian corrections. A consideration of the history and development of provincial and federal correctional systems. The role of sentencing in the correctional process and alternatives to confinement. Discussion of the social organization of correctional institutions, including the inmates, correctional officers, correctional treatment staff and administrators. Parole board decision making and the issues surrounding the re-entry of offenders into the community. Community-based corrections programs and outcomes. Prerequisite: CRIM131.

### **CRIM 251-3 Introduction to Policing**

An examination of the organization and operation of contemporary Canadian policing. Consideration of the history and development of policing in Canada, the role of the police in Canadian society and the police occupation, including recruitment and training. Discussion of police decision making and the exercise of discretion, police powers, and structures of accountability. Managing the police organization. Examination of police-community relations and crime prevention initiatives. Prerequisite: CRIM 131. Students with credit for CRIM 151 may not take CRIM 251 for further credit.

### **CRIM 261-3 Practicum II**

Second term of work experience in the Criminology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of CRIM 161 and 45 units with a minimum CGPA of 2.75.

### **CRIM 300W-3 Current Theories and Perspectives in Criminology**

A detailed examination of current theories and perspectives in criminology. The content of the course will change with developments in the area. Students can expect to study biological, psychological and sociological theories and perspectives, as well as those from other relevant disciplines and fields of inquiry (e.g. geography, political science and cultural studies). Prerequisite: CRIM 101. Writing.

### **CRIM 301-3 Crime in Contemporary Society**

Contemporary issues, problems and themes pertinent to the field of criminology. Development, character and function of criminology as an academic and professional discipline. Status of criminology in the Canadian context. Selected issues of the study of crime, law and justice which will vary depending on instructor. This course may not be taken by students who are majoring or minoring in Criminology. Breadth-Social Sciences.

### **CRIM 302-3 Critical Approaches to Crime and Deviance**

Critique of traditional criminological theory and of the conventional approaches to the problems of crime and punishment. Critique of classical etiological criminology. Examination of the relationships between crime, class and power. The criminal as a scapegoat for the system. The stereotype of the criminal. Street crime vs. corporation and state crime. Criticism of treatment ideology and techniques. Comparison of conservative and radical criminal policy. The controversy about the possibility of a value-free social science and about the political commitment of the social scientist. Prerequisite: CRIM 101.

### **CRIM 310-3 Young Offenders and Criminal Justice: Advanced Topics**

Examines some of the more complex contemporary issues relating to young offenders and justice. For any given term, the content of the course will reflect current controversies as well as faculty and student interests. Topics may include social control theory and juvenile justice; an assessment of theories of rehabilitation; the legal philosophy of the young offenders legislation and its impact on juvenile justice; and an evaluation of diversion, deinstitutionalization and de-legalization in Canada and the United States. Prerequisite: CRIM 101.

### **CRIM 311-3 Minorities and the Criminal Justice System**

An analysis of political, economic, and ethnic minorities and their relationship with the criminal justice system. Critical analysis of possible discordance, disharmony or conflict between ethnic and racial minorities such as Native Indians, Inuit, Metis, Doukhobor and others and the legal and social norms of the 'host' majority. Women and the criminal justice system. Prerequisite: CRIM 101.

### **CRIM 312-3 Criminological Perspectives on Social Problems**

Involves detailed study of forms of deviance that have been commonly defined as constituting 'social problems'. Consideration of drug abuse (alcohol, nicotine, heroin and others), suicide, prostitution, obscenity, gambling and abortion. Justifications for present legislative policy and the relationship between these activities and the criminal justice system. Prerequisite: CRIM 101.

### **CRIM 313-3 Specific Types of Crimes**

Critical analysis of a specific type of crime with particular emphasis on the nature, the incidence, correlates, control and prevention. Special attention may be given to white collar crime, computer crime, organized crime, violent crimes, political crimes, sexual offence, professional crimes, morality crime, etc. Prerequisite: CRIM 101.

### **CRIM 314-3 Mental Disorder, Criminality and the Law**

Critical examination of the impact of psychiatry and related clinical professions on the criminal justice system. Relationship between institutions of mental health and legal control. The relevance of psychiatric theory and decision-making for the processing of mentally disordered offenders. The role of forensic clinicians in the courts, prisons, mental hospitals and related agencies. Specific issues addressed in this course will include psychiatric assessment, criminal responsibility, fitness to stand trial, prediction of

dangerousness, treatment of mentally ill criminals and the penal and therapeutic commitment of the insane. Prerequisite: CRIM 101. Recommended: CRIM 131.

#### **CRIM 315-4 Restorative Justice**

An examination and analysis of the principles, assumptions, key concepts and applications of restorative (Transformative) justice. The course will contrast restorative justice with the dominant retributive/punitive model of justice and provide an introduction to a variety of both established and emerging expressions of restorative justice including, victim/offender reconciliation programs, family/group conferencing and circle remedies. Breadth-Social Sciences.

#### **CRIM 316-3 Sexual Offenders and Sexual Offences**

Provides an overview of current theoretical, clinical, and legal issues related to sexual offenders and sexual offences. For each of these issues, consideration will be given to different approaches and perspectives, and debates characterizing them. The topics to be covered include: explanatory models of sexual offending; developmental risk factors of sexual offending; typologies of sexual offenders; criminal careers of sexual offenders; phallometric assessment; actuarial and clinical risk assessment; treatment programs and their effectiveness, and criminal justice system initiatives. Prerequisite: CRIM 101 and 103. Students who have taken CRIM 417 in Spring or Summer 2005 may not take this course for further credit.

#### **CRIM 317-3 Prostitution in Canada**

Examines the history of prostitution; research on sex sellers, sex buyers, and managers; theories of prostitution; models of prostitution law; the history of prostitution law and its enforcement; the findings and recommendations of various Committees, Commissions and Task Forces examining prostitution in Canada. Prerequisite: CRIM 101. Students who have taken CRIM 313 (Specific Types of Crime) prior to Summer 2007 may not take this course for further credit.

#### **CRIM 318-3 Special Topics in Criminology**

A critical analysis of specific areas of criminology or criminal justice. The subjects covered will change from term to term depending on the specific interests of faculty, or students and current issues in criminology. Prerequisite: CRIM 101.

#### **CRIM 319-3 Special Topics in Criminology**

A critical analysis of specific areas of criminology or criminal justice. The subjects covered will change from term to term depending on the specific interests of faculty, or students and current issues in criminology. Prerequisite: CRIM 101.

#### **CRIM 320-3 Quantitative Research Methods in Criminology**

A detailed examination of the quantitative research methods and techniques most frequently used in criminological research. Advantages and shortcomings of each method and the appropriateness of each technique for criminological research. Problems of pure and applied research. Specific issues of interdisciplinary research. Critical evaluation of the quantitative methods used in certain major criminological studies. Prerequisite: CRIM 101; one of CRIM 120 or 220. CRIM 320 may be taken concurrently with CRIM 321. Quantitative.

#### **CRIM 321-3 Qualitative Research Methods in Criminology**

A detailed examination and application of qualitative research methods and techniques most frequently used in criminological research. Advantages and disadvantages of each method and the appropriateness of each technique for criminological research. Ethics of criminological research. Specific issues of interdisciplinary research. Critical evaluation

of qualitative methods used in certain major criminological studies. Prerequisite: CRIM 101; one of CRIM 120 or 220. This course may be taken concurrently with CRIM 320.

#### **CRIM 330-3 Criminal Procedure and Evidence**

Critical examination of selected topics in criminal procedure and evidence, including jurisdiction, police powers of search and seizure, the right to counsel and pre-trial and trial procedures. Brief survey of the system of rules and standards by means of which the admissibility of evidence is determined. Close examination of the Charter of Rights and Freedoms and its impact on criminal procedure and evidence. Prerequisite: CRIM 101 and 230.

#### **CRIM 331-3 Advanced Criminal Law**

An extension of CRIM 230, this course will examine Canadian criminal law in greater depth as well as in comparison with other jurisdictions. Each term several substantive areas will be analysed closely. The areas to be examined will be determined by student interest but may include sexual offences, public order offences, mental disorder and the criminal process, property offences, etc. Prerequisite: CRIM 101 and 230.

#### **CRIM 332-3 Sociology of Law**

Introduction to the theory of sociology of law. Law and social structure. Law as a product of a social system and as an instrument of social change. Social functions of the law. Relationship between law and the structure and function of various other social institutions. The process of law-making. Process by which various interests become translated into legal rules. The social reality of the law; the law in action. Social sciences findings into the operation and practice of the law. Critical and feminist perspectives on law. Public knowledge, awareness, opinions and attitudes to the law, sanctions and the criminal justice system. Prerequisite: CRIM 101 and 135.

#### **CRIM 333-3 Women, Law and the State**

Provides an in-depth consideration of feminist perspectives on the relationship of women to the state and the law. The nature of the contribution of criminal and family law to the reproduction of gender relations will be analyzed. The implications of legal intervention and non-intervention in family relations, sex-specific and sex-related legislation will be examined. Theoretical concepts and issues such as patriarchal relations, sexuality and reproduction, and formal and informal control will be addressed. Prerequisite: CRIM 101; 135. Recommended: CRIM 213.

#### **CRIM 334-3 Law and Human Reproduction**

Overview of theoretical perspectives and available research on debates linked with human reproduction. Reconsideration of the effects of legislation, social policy and social change on contraception, birth, abortion, adoption, eugenics policies, new reproductive technologies, sexualities, and other topics. Historical and contemporary examples will be used. Feminist perspectives will be featured along with other approaches to human reproduction. Prerequisite: this course is identical to WS 334 and students may not take both courses for credit. Students who have taken CRIM 416, 417, 418 under the title Law and Reproduction may not take this course for further credit.

#### **CRIM 335-3 Human Rights and Civil Liberties**

A study of the relationship between the government and the individual. Focus upon the Canadian Charter of Rights and Freedoms and its interpretation by the judiciary. Examination of the issues of equality before the law, freedom of speech, freedom of religion and freedom of expression. A study of human rights at the international, federal and provincial levels. Prerequisite: CRIM 330.

#### **CRIM 336-3 Corporate Crime and Corporate Regulation**

An examination and analysis of the nature, scope and impact of corporate crime, the principal organizational, social, political and economic factors involved in the definition and commission of such crime, and the ways in which governments and organizations respond to the problem. Particular types of corporate crime will be used as vehicles for exploring the legal and administrative framework that defines and regulates corporate wrongdoing. Prerequisite: CRIM 101; 135. Recommended: CNS 280 or ECON 101.

#### **CRIM 338-3 Philosophy of Law**

Introduction to the philosophy of law. Concepts of law, constitution and sovereignty. The nature and sources of the law. Examination of natural law, legal positivism, Kelsen's pure theory of law, legal realism, modern normative and analytical theories, critical legal theory and feminist theory. Prerequisite: CRIM 101 and 135.

#### **CRIM 340-3 Criminal Justice Policy Making and Policy Analysis**

Examines alternative approaches to developing and evaluating public policy in criminology through the use of case studies. Prerequisite: CRIM 101 and 220. Students who have taken CRIM 415 under this topic may not take this course for further credit.

#### **CRIM 343-3 Correctional Practice**

An in-depth consideration of a range of factors influencing contemporary correctional practice. The fundamental tension between the interests of offenders and the requirements of those managing correctional programs; the context provided by underlying theoretical assumptions about correctional practice and by influences such as public perceptions, politics and the economy. Prerequisite: CRIM 101. Recommended: CRIM 241.

#### **CRIM 345-3 Theoretical Perspectives on Punishment**

Examines theories of punishment in Western societies, with a particular emphasis on the 'revisionist' literature i.e. that which explains punishment techniques in terms of social-structural relationships rather than the rhetoric of reformers. The course also examines competing explanations of the demise of corporal punishment and the ascendance of incarceration at the end of the eighteenth and beginning of the nineteenth century, the advent of various kinds of 'community corrections' through the twentieth century, and changes in punishment and social control with the advent of 'risk society.' Prerequisite: CRIM 101.

#### **CRIM 350-3 Techniques of Crime Prevention I**

Techniques of mobilizing community resources for crime prevention. Organizing, implementing and managing citizen efforts to reduce crime. Recruiting citizen assistance, training requirements, establishing and operating citizen organizations, evaluating results. Organizing programs for reducing criminal opportunity, programs for education, employment and recreation. Operating youth services centres, residential programs, crisis intervention and emergency centres. Prerequisite: CRIM 101.

#### **CRIM 351-3 Police Accountability and Ethics**

Examines police accountability including the expected ethical conduct of police, police powers, police decision-making, the exercise of discretion, and the structure of accountability. Specific emphasis on police codes of ethics, core values of police agencies, the function of internal investigations, and the role of civilian review. Prerequisite: CRIM 101 and 251.

#### **CRIM 352-3 Environmental Criminology: Theory and Practice**

Explores the history of the field of environmental criminology and critically examines the theoretical

approaches within the field. Special emphasis is placed upon the relationship between crime, fear and the environment, the criminality of place and the decision processes involved in criminal events. Prerequisite: CRIM 101.

### **CRIM 355-3 The Forensic Sciences**

Examines the use and interpretation of physical forensic evidence in court. It will critically examine and evaluate the major forensic sciences used in criminal investigations today, as well as look at the crime scene. Subjects examined will include forensic pathology, odontology, biology, DNA evidence, firearms evidence, toxicology chemistry and questioned documents. Techniques will be illustrated with case studies. Breadth-Social Sciences.

### **CRIM 356-3 The Forensic Sciences II**

Introduces the methodological principles of analytical procedures and applications relevant to 21st century criminalistics as applied to skeletonized remains. Prerequisite: CRIM 101.

### **CRIM 357-3 Forensic Anatomy**

An introduction to human anatomy and physiology relevant to the biological aspects of human forensics. Examines different body systems including form, function and development in the human adult and child, and discusses post mortem alteration to anatomical structures in the context of forensic anthropology and pathology. Prerequisite: CRIM 101.

### **CRIM 361-3 Practicum III**

Third term of work experience in the Criminology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of CRIM 261 and 60 units with a minimum CGPA of 2.75.

### **CRIM 369-4 Professional Ethics and Interpersonal Skills in Criminal Justice**

Immediate ethical issues confronting the professional in the criminal justice system are examined. Such concerns include privileged communications and confidentiality in fields and research situations; the conflict between the professional's duty to protect society and her/his duty to the client; ethics of decision-making; research ethics; situation ethics; professional ethical codes and legal constraints on professional conduct. Different modes of personal interaction in selected parts of the criminal justice system are examined and taught. Mixed problems of skill and ethics are explored in controlled laboratory settings. Prerequisite: CRIM 101; reserved for criminology majors and honors. This course is a prerequisite for CRIM 462. Completion of this course does not guarantee admission to field practice.

### **CRIM 370-3 Directed Readings**

Independent readings in a selected field of study, under the direction of a single faculty member. Papers will be required. Prerequisite: CRIM 320 and 330, and written application to the school no later than the last day of classes of the preceding term. CRIM 370 and 470 may not be taken concurrently.

### **CRIM 384-3 Crime and Literature**

Questions of crime and criminal justice in novels and other forms of fiction are explored. Includes a critical discussion about crime plots, their social settings and outcomes, the psychology and sociology of criminal characters and their victims, and whether justice was achieved or denied in the course of the plot. Writing intensive. Prerequisite: students who have taken CRIM 416 or 417 or 418 as Crime and Literature may not take this course for further credit. This course is identical to ENGL 384 and students may not take both courses for credit.

### **CRIM 402-3 Biological Explanations of Crime**

Examines possible biological factors that could result in a predisposition towards criminal behavior. These include not only the genetic factors that affect

behavior and therefore could potentially predispose towards crime, but also biochemical, neurological, nutritive and accidental effects such as head injuries. This course will look critically at all evidence both for and against any possible biological predispositions for criminogenic behaviors, together with the interaction with the environment. In particular, moral and ethical issues will be considered and debated. Prerequisite: CRIM 101. Students with credit for CRIM 416 in the summer 2000 or 2001 term may not take CRIM 402 for further credit.

### **CRIM 410-3 Decision-making in Criminal Justice**

Examination of the factors which influence decision making in the criminal justice system. The exercise of discretion by criminal justice personnel; the role of organizational policies and priorities in decision making; the involvement of victims and the public. Consideration of decision making at specific stages of the criminal justice process. Prerequisite: CRIM 131.

### **CRIM 412-3 Crime, the Media and the Public**

Focus is upon the relationship among the content of media, especially books, films and TV. There will be an examination of the type and frequency of crimes associated with displays in the media, either coincidentally or causally, and the perception by and impact upon the public of such relationships (physically and psychologically). In addition, there will be an examination of the nature of political efforts by members of the public to alter this inferred relationship through law enforcement and legislative measures. Prerequisite: CRIM 101.

### **CRIM 413-3 Terrorism**

Considers the nature, extent, and basis of terrorism as an official crime throughout the world and its impact upon criminal justice systems. Theoretical explanations in a comparative perspective will be employed to examine the impact of terrorism on various countries and the response of governments to it. Prerequisite: CRIM 101.

### **CRIM 414-3 Special Topics in Criminology**

A critical analysis of specific areas of criminology or criminal justice. The subjects covered will change from term to term depending on the specific interests of faculty, or students and current issues in criminology. Prerequisite: CRIM 101.

### **CRIM 415-3 Special Topics in Criminology**

A critical analysis of specific areas of criminology or criminal justice. The subjects covered will change from term to term depending on the specific interests of faculty, or students and current issues in criminology. Prerequisite: CRIM 101.

### **CRIM 416-3 Current Issues in Criminology and Criminal Justice**

A critical analysis of certain 'hot' issues in criminology and criminal justice. The topics covered change from term to term. Prerequisite: CRIM 101. A student may not take for credit toward the degree more than three special topics courses (i.e. CRIM 416, 417 418).

### **CRIM 417-3 Current Issues in Criminology and Criminal Justice**

A critical analysis of certain 'hot' issues in criminology and criminal justice. The topics covered change from term to term. Prerequisite: CRIM 101. A student may not take for credit toward the degree more than three special topics courses (i.e. CRIM 416, 417 418).

### **CRIM 418-3 Current Issues in Criminology and Criminal Justice**

A critical analysis of certain 'hot' issues in criminology and criminal justice. The topics covered change from term to term. Prerequisite: CRIM 101. A student may not take for credit toward the degree more than three special topics courses (i.e. CRIM 416, 417 418).

### **CRIM 419-3 Aboriginal/Indigenous Justice**

An in-depth examination of Aboriginal/indigenous conceptions of justice in dealing with crime and other

trouble in indigenous communities, and in relations among peoples. Prerequisite: CRIM 101 or FNST 101 or 201 or permission of the instructor. Students who took this course as CRIM 416 or 418 may not take this course for further credit. Students who take FNST 419 cannot take CRIM 419 for further credit.

### **CRIM 420-3 Advanced Topics in Criminological Research**

An extension of CRIM 220 and 320, this course will examine one or more of the following: evaluative research in the criminal justice context; techniques and efficacy of predicting delinquency and recidivism; survey research; archival, historical or legal methods; field research, etc. Prerequisite: CRIM 101; 320 and 321.

### **CRIM 429-3 Indigenous Peoples and International Law**

An examination of how relations between indigenous and non-indigenous peoples framed and were framed by the development of international law from the 15th century onward. Prerequisite: CRIM 101 or FNST 101 or 201 or permission of instructor. Students who have taken this course under CRIM 416, or 418 under the title "Indigenous Peoples and International Law" or "Indigenous Peoples and Evolving International Relations" may not take this course for further credit. Students may not take FNST 429 for further credit.

### **CRIM 431-3 Comparative Criminal Justice Systems**

Critical examination of the theory and method of comparative criminal justice. Review of common law systems, civic law systems, and socialist law systems. Specific consideration of the development, structure and operation of the criminal justice systems in selected countries, which may include England, France, Federal Republic of Germany, the former Soviet Union, the People's Republic of China, and Japan. Focus on the impact of historical, social, political, religious and cultural factors on the criminal justice process. Consideration, of the structure and operation of various components of the criminal justice process in selected countries, including the police, criminal courts, and corrections. Prerequisite: CRIM 101.

### **CRIM 432-3 Gender in the Courts and the Legal Profession**

The gendered nature of law will be addressed through an examination of its underlying factual assumptions, and the use of social science research as evidence in equality litigation. The use of the charter, human rights legislation, and other legal means to achieve gender equality through the legal system in the areas of work, employment and pay equity, and compensatory schemes for personal injuries will also be examined. This course will also examine women's struggles to gain admittance to the legal profession, and the barriers which may still prevent them from participating equally in the profession today. Prerequisite: CRIM 330.

### **CRIM 433-3 Communities and Crime**

Examines communities and neighborhoods as contexts for thinking about a wide range of criminological issues including crime, fear, victimization, policing, and policy. Theoretical explanations and applied research will be used to explore how and why "community" is important for understanding crime and criminal justice. Prerequisite: CRIM 101. Students who have taken this course as CRIM 418-3 may not take this course for further credit.

### **CRIM 435-3 Adult Guardianship Law**

A comprehensive exploration of the law affecting adult guardianship, substitute decision-making, and adult protection in Canada, including a detailed examination of the form, content and philosophical underpinnings of the relevant legislation in British Columbia. Topics include assessing mental



incapability, powers of attorney, living wills and health care directives, end of life decision-making, the law affecting consent to health care, and court-ordered guardianship for adults. Prerequisite: CRIM 101. Recommended: one of CRIM 330 or 335. This course is identical to GERO 435 and students cannot take both courses for credit. Students with credit for CRIM 418 when offered as Adult Guardianship Law, and GERO 410 when offered as Adult Guardianship Law, may not take CRIM 435 or GERO 435 for further credit.

#### **CRIM 436-3 Corporate Crime and Corporate Regulation: Advanced Topics**

A detailed examination and analysis of particular types of corporate wrongdoing and the nature and impact of the relevant legal and administrative framework. The topics will be selected by the particular course instructor and will, therefore, vary according to the instructor's interests as well as topicality. The areas of corporate crime which are chosen may include one or more of the following: 'economic crimes' such as violations of statutes which regulate competition, protect intellectual property, and safeguard stock market investors; crimes against the environment such as air and water pollution; and, crimes against consumers including the marketing of hazardous products, contaminated food, or dangerous drugs and devices. Prerequisite: CRIM 101. Recommended: CRIM 336.

#### **CRIM 437-3 Crime and Misconduct in the Professions**

Examines the use of self regulation by professional organizations (e.g. law societies, colleges of physicians and surgeons, stock exchanges) and the increasing demand by other occupational groups and social and economic entities to be governed by these internal controls in addition to, or in lieu of, the criminal and other state law. It will specifically examine how the criminal law is used in the context of self-regulation and how professionals can bypass the criminal law through self-regulating organizations. The professions will be examined in the context of administrative, civil and criminal law. Implications for self regulation in other areas and the future of self-regulation will also be considered. Prerequisite: CRIM 330.

#### **CRIM 440-3 Correctional Administration and Planning**

Theory and practice of organization and administration of correctional agencies. Particular attention is given to the political/bureaucratic interface in correctional administration, management styles, labour relations, management support systems and program planning. Identification and assessment of corrections management objectives. The relationship between corrections administration and other components of the criminal justice system. Prerequisite: CRIM 101; 131 and 241. Recommended: POL 251

#### **CRIM 442-3 Restorative Justice Practice: Advanced Topics**

An in-depth examination of the various community-based and institutional practices in promoting restorative processes, based on an examination and comparison of the values, philosophical approaches and outcomes of selected western and non-western models. Practices examined will include a range of restorative justice initiatives, including victim-offender mediation, family-group conferencing, multi-party mediation, and various circle remedies. This examination will include the application of restorative justice in the community, in schools and at all levels of the legal process (pre-arrest to post-incarceration and reintegration). Recommended: CRIM 315 and 343.

#### **CRIM 450-5 Techniques of Crime Prevention II**

Introduction to the modern techniques of crime prevention. Emphasis will be on crime prevention and reduction in fear of crime. Crime prevention through social change. Crime prevention through environmental design. Crime prevention through physical planning and architectural design. The concept of 'defensible space.' Obstructing and reducing the opportunities for the commission of crimes. Evaluating crime prevention programs. Prerequisite: CRIM 101.

#### **CRIM 451-3 Advanced Techniques in Forensic Science**

Looks at the advanced and sometimes more controversial areas of forensic science used in the criminal justice system today. Most areas are those outside the crime lab and require extensive and in-depth training in a very focused field. Seminars may cover areas such as the use of polygraph, blood spatter pattern analysis, entomology, pathology, odontology, anthropology, genocide investigation, facial approximation, crime scene analysis on land, underwater and mass homicide scenarios. Prerequisite: CRIM 101. Students with credit for CRIM 420 in 01-3, 00-3, 99-3, 98-3 or 97-3 may not take CRIM 451 for further credit. Recommended: CRIM 355.

#### **CRIM 452-3 Skeletal Pathology and Criminalistics**

The examination of disease processes which affect and reveal themselves in the human skeleton at the level of surface morphology, radiology and histology and other relevant analytical methodologies relevant to criminalistics and human identification. Prerequisite: CRIM 101. Recommended: CRIM 357. Students who have taken this course as CRIM 417 may not take this course for further credit.

#### **CRIM 453-3 Policing Illegal Drug Markets**

Provides an overview of the theoretical, analytical, and ethical issues related to drug law enforcement. Examines the strategies used by the police in responding to the challenges posed by illegal drug markets. Prerequisite: CRIM 101.

#### **CRIM 454-3 Criminal Profiling**

Provides an overview of the advanced issues relating to the scientific study, development and evaluation of criminal profiling. Outlines the criminological and psychological principles upon which criminal profiling is based, including classification of violent behaviour, behavioural change and consistency. Prerequisite: CRIM 101.

#### **CRIM 455-3 Advanced Issues in Policing**

Covers the major issues surrounding policing in the 21st century. The topics to be examined will include the challenges confronting police services in a global community; police leadership; recruiting and training of police officers; the planning and delivery of police services; models of deployment; policing the multi-cultural society; use of force by police officers; the effectiveness of police interventions; the use of technology in police work; and community policing. Prerequisite: CRIM 101, 131 and 251.

#### **CRIM 456-3 Investigative Psychology in Policing**

Advanced issues relating to the empirical and scientific study of investigative psychology in policing. Outlines the main applications of investigative psychology, including police interrogation techniques, confession, false allegation, lie detection, crisis negotiation, risks and threats assessment, and psychological autopsies. Prerequisite: CRIM 101 and 251. Students who have taken CRIM 414 under this topic may not take this course for further credit.

#### **CRIM 457-4 Crime and Criminal Intelligence Analysis**

Examines data handling, data quality and analysis of various criminal justice system information sources common to police services, government agencies and academic researchers. Develops skills in tactical, strategic and administrative crime analysis functionality. Prerequisite: CRIM 320 and 352. Recommended: CRIM 321, 350, 450. Students who have taken CRIM 418 under this topic may not take this course for further credit.

#### **CRIM 461-3 Practicum IV**

Fourth term of work experience in the Criminology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of CRIM 361 and 75 units with a minimum CGPA of 2.75.

#### **CRIM 462-15 Field Practice**

Supervised three month field practicum in selected criminal justice agencies. Students are required to complete a series of reports addressing theoretical and practical issues relating to their placement as well as to attend regular feedback seminar discussions with faculty supervisors and other field practicum students. Prerequisite: prior approval of the school and a minimum CGPA of 2.5 is required. Applicants must be formal criminology majors or honors students, and must be enrolled in or have completed CRIM 320, 321 and 369. In extraordinary circumstances, students may be accepted with CRIM 320 or CRIM 321, with the approval of the field practice co-ordinator. A minimum grade of B- in CRIM 369 is required. Only under exceptional circumstances, to a limit of three units, and with the formal written approval of the director of the undergraduate program, will enrolment for course work in addition to CRIM 462 be permitted.

#### **CRIM 465-3 Crime, Economics, and the Economy**

Considers the study of crime from an economic perspective and the relationship between crime and the economy. Theoretical frameworks and empirical examples from both economic and criminology will be discussed. Prerequisite: CRIM 101. Students who have taken CRIM 414, 415, 416, 417 or 418 under this topic may not take this course for further credit.

#### **CRIM 470-5 Directed Studies**

Independent research in a selected criminological area, under the direction and supervision of at least one faculty member. A research report is required. Prerequisite: CRIM 320, 321 and 330. Written application to the school no later than the last day of classes of the preceding term. Reserved for criminology honors and majors. Recommended: CRIM 370.

#### **CRIM 490-5 Honors Thesis I**

An in-depth investigation of a selected topic in criminology, including a comprehensive review of the literature as well as initial and partial completion of the thesis research. Open only to students who have been admitted to the criminology honors program.

#### **CRIM 491-5 Current Theory and Research in Criminology: Advanced Topics**

A detailed and comprehensive examination of the dominant theoretical research programs currently found in criminology. The subject matter of the seminars may change from year to year according to topicality and may include the following: biological theory and research; social psychological research programs (e.g., social learning theory); environmental criminology; left realism; feminism; post structuralism and post modernism. Students are also required to attend a weekly pro-seminar. Prerequisite: normally open only to students who have been admitted to the criminology honors program. Other students may be admitted under exceptional circumstances with the



written permission of the director of undergraduate programs.

#### **CRIM 499-12 Honors Thesis II**

An honors thesis is a research report written under the supervision of a faculty member, a copy of which is to be permanently lodged in the School of Criminology. Students are required to attend a weekly seminar at which various issues associated with the linking of theory and method are examined and where students can both discuss their progress and share their research experiences. On completion, the thesis is to be orally defended in a school seminar. Open only to students who have been admitted to the criminology honors program. Students are not permitted to take other courses while enrolled in this course. Prerequisite: a minimum grade of B in CRIM 490 and 491 is required.

#### **CRIM 800-3 Theories of Crime**

A comprehensive overview of theories and the development of theoretical knowledge in criminology. This seminar will familiarize students with competing levels of understanding vis-à-vis crime and deviance phenomena. The course will emphasize the integration of historical and contemporary theory, theory construction and testing, and the impact of factors such as ideology, politics and social structure on the emergence of criminological thought.

#### **CRIM 801-3 Theories of Crime II**

Intensive exposure to the major streams of criminological theory. Topics for in-depth analysis will be selected according to the availability and interest of specific course instructors. Emphasis will be placed on the relationship between ideas and social forces, as well as the interplay of theory and practice.

#### **CRIM 810-3 The Phenomena of Crime I**

Designed for the beginning graduate student, this course covers a wide variety of topics all of which deal with what we know about the phenomena of crime historically, temporally and geographically. This course will look at the patterns of crime and victimization, and will explore crime patterns at local, provincial, national and international levels. Known characteristics of specific forms of crime will be studied.

#### **CRIM 811-3 The Phenomena of Crime II**

Topics for in-depth analysis will be selected according to the availability and interest of specific course instructors and selected from but not limited to one or more of the following topics: historical criminology; the ecology of crime; environmental criminology; the media and crime; fear of crime; victimization; organized crime; or corporate crime.

#### **CRIM 820-3 Criminal Justice Policy Analysis**

An introduction to policy development and policy analysis in the field of criminal justice, including a general review of the function of bureaucratic agencies in the public sector and the particular role of government ministries providing criminal justice services. Major topic areas include: organization theory; policy planning theory; decision theory; inter-governmental analysis as it applies to the administration of justice; and comparative analyses of criminal justice policies especially related to international or trans-national crime.

#### **CRIM 821-3 Criminal Justice Analysis: A Systems Approach**

The course will emphasize the systems approach in criminal justice problem analysis, policy development and planning. Program evaluation techniques will be applied to the major types of planning and program initiatives taken within or across criminal justice systems. Topics for in-depth analysis will be selected according to the availability and interest of specific course instructors and may be selected from any area of criminal justice practice including: law enforcement;

the judiciary; court administration; corrections; or legal services.

#### **CRIM 830-3 Law and Social Control I**

An examination of the social utility of legal intervention in the instance of criminal law; the relationship between law and social order; and the process of law making and the social efficacy of specific criminal sanctions.

#### **CRIM 831-3 Law and Social Control II**

Topics for in-depth analysis will be selected according to the availability and interest of specific course instructors and selected from but not limited to one or more of the following themes: theoretical perspectives on punishment and social control; theoretical perspectives on policing; law and mental health; law and the environment; and law and gender.

#### **CRIM 840-3 Proseminar**

Examination of current theory and research by faculty in the School of Criminology.

#### **CRIM 860-3 Research Methods I**

The course will cover basic research design for criminological problems and basic techniques for the conduct of research in criminology and socio-legal study. The research methods covered will comprise both quantitative and qualitative techniques. The course is intended to establish fundamental research skills to be applied in advanced research methods seminars, in other core area courses, and in the preparation of theses and dissertations.

#### **CRIM 861-3 Research Methods II**

This course covers both parametric and non-parametric statistical techniques with an emphasis on parametric analysis. Basic descriptive and inferential statistics will be covered, including univariate measures, analyses of cross classified data, correlation, t-tests, analysis of variance, regression, and related measures. Also discussed are the experimental and statistical research strategies which produce those data. The approach will be conceptual and will emphasize the strengths, weaknesses, selection and application of various statistical, experimental and quasi-experimental techniques.

#### **CRIM 862-3 Research Methods III**

This course will address a range of research techniques generally subsumed under the rubric of 'qualitative' research including field research, interview techniques, historical and legal research, and documentary analysis. Emphasis will be on the logic underlying such inquiry, the advantages and limitations associated with different sources of information and procedures, and the processes by which analytical rigor is achieved.

#### **CRIM 863-3 Research Methods IV**

Advanced topics, issues and techniques in criminological and socio-legal research. The subject matter of this course will vary according to instructor interests and specialization. Specific areas of concentration may include the following: advanced multivariate statistical techniques, documentary and historical methods, evaluative and predictive research, participant observation/ethnography, systems analysis, and computer simulation modelling. Prerequisite: CRIM 860, 861, 862, or by permission of the instructor.

#### **CRIM 869-3 Professionalism and Criminal Justice**

This course is designed for students entering a field practicum placement via CRIM 880 and is a required component of the MA by Coursework, Project and Practicum option. It introduces the student to the legal and ethical issues relevant to professionalism and leadership in the field of Criminology. Related professional roles and functions are examined. The course integrates theory and practice from a case study perspective.

#### **CRIM 870-3 Directed Readings**

Intensive readings under the supervision of a faculty member, in areas of interest related to the student's program.

#### **CRIM 871-3 Selected Topics**

Concentrated studies in areas of student specialization.

#### **CRIM 872-3 Selected Topics**

Concentrated studies in areas of student specialization.

#### **CRIM 873-3 Selected Topics**

Concentrated studies in areas of student specialization.

#### **CRIM 880-3 Field Practicum**

A term of full-time advanced and intensive practicum experience supervised by selected faculty and justice system personnel. Students will assume a large measure of responsibility and participate in a range of activities related to the placement. Prerequisite: CRIM 869.

#### **CRIM 885-3 Master's Project**

MA by coursework, project and practicum paper. Prerequisite: CRIM 869.

#### **CRIM 898-6 MA Thesis**

#### **CRIM 899-6 PhD Thesis**

## **Undergraduate Semester in Dialogue DIAL**

### **DIAL 390W-5 Undergraduate Semester: Dialogue**

The Dialogue component of the Undergraduate Semester in Dialogue will immerse students in the art and practice of thinking and communicating. The focus will be on strategies and methods to use in understanding diverse perspectives. Students will have an opportunity to expand their verbal and written communication skills as well as explore dialogue as a developing academic field. Prerequisite: 45 units. Students should apply prior to the term in which they wish to enrol. Students can be accepted into either the Summer Institute in Dialogue (DIAL 390 and 391, 10 units) or the Undergraduate Semester in Dialogue (fall or spring term, DIAL 390, 391 and 392, 15 units), but not both. Writing/Breadth-Social Sciences.

### **DIAL 391W-5 Undergraduate Semester: Seminar**

Topics covered each term will vary, but generally each course will examine a subject that encourages broad approaches and probes provocative issues. The course will consist of discussions led by faculty, frequent visits from relevant off-campus experts, a heavy reading load, and a number of individual and group student projects. Learning will be active rather than passive, stimulating students to research, explore and discuss rather than following a lecture format. Prerequisite: 45 units. Students should apply prior to the term in which they wish to enrol. Students can be accepted into either the Summer Institute in Dialogue (DIAL 390 and 391, 10 units) or the Undergraduate Semester in Dialogue (fall or spring semester, DIAL 390, 391 and 392, 15 units) but not both. Writing/Breadth-Social Sciences.

### **DIAL 392W-5 Undergraduate Semester: Final Project**

For their final project, each student will produce a manuscript suitable for submission to a major public media outlet on a topic relevant to the course focus for that term. Prerequisite: 45 units. Students should apply prior to the term in which they wish to enrol. Students can be accepted into either the Summer Institute in Dialogue (DIAL 390 and 391, 10 units) or the Undergraduate Semester in Dialogue (fall or spring semester, DIAL 390, 391 and 392, 15 units), but not both. Writing/Breadth-Social Sciences.

**DIAL 460-4 Seminar in Dialogue and Public Issues**

Focuses on the practical tools and conceptual approaches used in dialogue, with comparisons of the role and impact of dialogue among community, government, corporate, union, First Nations, legal-regulatory, advocacy groups and organizations. Emphasis is on interaction among interest groups and stakeholders, cultures of negotiation and decision-making, techniques of facilitation, and strategies for effective outcomes. Prerequisite: 75 units including either at least two of CMNS 332, 347, 425, 432, 437, 447 or DIAL 390, 391, 392.

**DIAL 461-3 Field Placement in Dialogue**

Students work under faculty supervision in a placement where dialogue is planned or where dialogue occurs. Arrangements are the responsibility of the student, and enrolment is limited. Prerequisite: 75 units including CMNS/DIAL 460, and permission of instructor.

## Earth Sciences EASC Faculty of Science

**EASC 101-3 Physical Geology**

An introduction to the origin and character of minerals, rocks, earth structure, earth surface processes and plate tectonic theory. Students with credit for GEOG 112 cannot take this course for further credit. Breadth-Science.

**EASC 103-3 The Rise and Fall of the Dinosaurs**

Class Dinosaurs and how our understanding of this extinct group continues to evolve in the light of new discoveries. Topics include the rise of the dinosaurs, criteria for the recognition of the different groups, fossil data regarding dinosaur metabolism, evidence of dinosaur behavior, possible evolutionary relationships with birds, and theories of dinosaur extinction. Students may not take EASC 103 for credit towards EASC major or minor program requirements. Breadth-Science.

**EASC 104-3 Geohazards – Earth in Turmoil**

An introduction to the range of geological hazards that affect the Earth, the environment and humanity. Topics covered will include the hazards and risks related to volcanic eruptions, earthquakes, landslides and avalanches, tsunamis, geomagnetic storms and other potentially cataclysmic events. The forecasting and possible mitigation of these geohazards will also be investigated. Students with credit for GEOG 312-4 may not take this course for additional credit. Students may not take EASC 104 for credit towards EASC major or minor program requirements. Breadth-Science.

**EASC 106-3 Earth Through Time**

An introduction to the changes that the Earth has experienced, from its initial formation to the present day, intended for non-majors. Topics include changes in plate tectonic style, mountain building periods, glaciations during Earth history, formation of life, the fossil record and evolution, major extinctions, and the rise of man. Students with credit in EASC 102 may not take EASC 106 for additional credit. Students may not take EASC 106 for credit towards EASC major or minor program requirements. Breadth-Science.

**EASC 107-3 Economic Geological Resources**

An overview of the Earth's major economic resources of the Earth for non-Earth Science majors or minors. Background will be provided on major Earth processes which cause significant natural resources including metallic resources, hydrocarbon and other energy resources, industrial mineral and groundwater resources. Much of the focus will be on the changing nature of how resources have been found and exploited through history and how this may evolve in the near to distant future. Students may not use

EASC 107 for credit towards earth sciences major or minor program requirements. Breadth-Science.

**EASC 108-3 Exploring the Solar System**

An introduction to the geology of our solar system through a comparative survey of the planets. Emphasis will be on the geology of the Earth and how we can use this knowledge to learn more about the neighboring planets. A wealth of accessible information now exists from which we can attempt to reconstruct the geological history of each planetary surface in our solar system. Comparative planetology will be used to explore such topics as the structure and origin of the solar system, the origin and fate of the Earth, the importance of water in the solar system, the formation and geological history of planetary lithospheres and atmospheres.

**EASC 201-3 Stratigraphy and Sedimentation**

An introduction to the nature, origin and interpretation of stratified earth materials. Principles of lithostratigraphy, biostratigraphy and chronostratigraphy, sequence stratigraphy, the facies concept. Prerequisite: EASC 102 or 210.

**EASC 202-3 Introduction to Mineralogy**

Introduction to crystallography, crystal chemistry and chemical properties and chemical principles necessary for the study of minerals. Prerequisite: EASC 101 and CHEM 121.

**EASC 204-3 Structural Geology I**

Description, classification and interpretation of earth structures: folds, faults, joints, cleavage and lineations. Elementary rock mechanics. Prerequisite: EASC 102 or 210, and PHYS 125 or 120 or 140, (or PHYS 101 with a grade of B or higher).

**EASC 205-3 Introduction to Petrology**

Optical phenomena related to the use of the polarizing microscope in the identification of minerals in thin section. Petrogenesis and classification of igneous sedimentary and metamorphic rocks. Hand specimen and thin section identification of rocks and minerals. Prerequisite: EASC 202, CHEM 122, PHYS 121 (or PHYS 102 with a grade of B or higher), and PHYS 131 (or PHYS 130 with a grade of B or higher). PHYS 126 may be substituted for PHYS 121.

**EASC 206-2 Field Geology I**

Seven days of field excursions to demonstrate the geology of British Columbia. Prerequisite: EASC 101 and prerequisite/corequisite EASC 210.

**EASC 207-3 Introduction to Applied Geophysics**

An introduction to geophysics emphasizing seismic, magnetic and gravimetric observations of the Earth. Applied geophysics. Prerequisite: MATH 152, PHYS 121, 131, all with a grade of C- or higher, or MATH 152, with a grade of C- or higher and PHYS 102, PHYS 130 both with a grade of B or higher. Quantitative.

**EASC 208-3 Introduction to Geochemistry**

Distribution and cycles of elements, minerals and rocks on and within Earth. Understanding and evolution of Earth systems through high and low temperature fluid-rock interaction, aqueous geochemistry, stable and radiogenic isotopes. Prerequisite: EASC 202, CHEM 121, 122 and 126. Quantitative.

**EASC 210-3 Historical Geology**

The study of the evolution of the Earth, the geological time scale, fossils and evolution, stratigraphic concepts, geological history of western Canada. Prerequisite: EASC 101 or GEOG 111. Students with credit for EASC 102 prior to 05-3 may not take this course for credit. Breadth-Science.

**EASC 300-3 Selected Topics in Earth Sciences**

An in-depth treatment of selected topics of earth sciences. Prerequisite: to be determined by instructor.

**EASC 301-3 Igneous and Metamorphic Petrology**

Mineralogy, phase relations, origin of igneous rocks; classification of igneous rocks. Mineralogy and textures of metamorphic rocks; hand sample and thin sections. Prerequisite: EASC 205 and 208.

**EASC 302-3 Sedimentary Petrology**

Description and classification, field and microscopic identification of sedimentary rocks; petrogenesis and paleoenvironmental reconstruction. Prerequisite: STAT 101 or STAT 201, EASC 201 and 205.

**EASC 303-3 Environmental Geoscience**

Environmental geology is a branch of earth science that deals with the relationship of people to their geological habitat. Topics covered will include environmental impact of mineral extraction and logging; erosion and sedimentation in rural and urban environments; and mass movements in mountainous terrain. The course includes two 1-day field trips that usually occur on Saturdays. Prerequisite: 60 units including six units in Earth Sciences and GEOG 213.

**EASC 303W-3 Environmental Geoscience**

Environmental geology is a branch of earth science that deals with the relationship of people to their geological habitat. Topics covered will include environmental impact of mineral extraction and logging; erosion and sedimentation in rural and urban environments; and mass movements in mountainous terrain. The course includes two 1-day field trips that usually occur on Saturdays. Prerequisite: 60 units including six units in Earth Sciences and GEOG 213. Writing.

**EASC 304-3 Hydrogeology**

An introduction to the basic concepts and principles governing the flow of groundwater in the subsurface environment. These are used to develop an understanding of aquifers and their physical properties, groundwater sustainability and management, and interaction of groundwater with surface water. In addition, as a foundation course in fluids in geologic media, this course has relevance to the oil and gas and mining industries, as well as to engineering applications such as dewatering. Prerequisite: One of EASC 101 or GEOG 111, and PHYS 126 or 121 (or PHYS 102 with a grade of B or higher). Quantitative.

**EASC 305-3 Quantitative Methods for the Earth Sciences**

Implementation of mathematical methods and numerical techniques for problem solving in the Earth Sciences. Examples and lab assignments will use Excel spreadsheets and/or Matlab computer programming/display software. Concepts covered include quantitative techniques for field data and error analysis in the geosciences, basic computer programming concepts and numerical modeling of Earth processes. Prerequisite: EASC 101, MATH 152 (grade of C or higher), PHYS 121 (grade of C or higher), STAT 101 or STAT 201 (grade C or higher), and six units in any 200 division or higher EASC courses.

**EASC 306-3 Field Geology II**

A 12 day field camp held after final exams in the spring term. Students will learn how to observe, record and interpret geological features, and will carry out geological mapping and analysis. Approximately five 1-hour lectures on field methods, equipment and safety will precede the field camp. Field locations may vary from year to year. Prerequisite or corequisite: EASC 201, 204, 205, 206 and GEOG 213.

**EASC 307-3 Applied Geophysics**

Application, instrumentation and limitations of electrical, electromagnetic, ground penetrating radar and seismic methods for engineering and geoscience applications. Prerequisite: EASC 207. Quantitative.

**EASC 309-3 Global Tectonics**

The study of motion and deformation of the earth's crust and upper mantle at a regional and global scale. A detailed examination of plate tectonic theory: plate boundary types, mechanics of plate movements, basin formation and mountain building. Case studies of major orogenic belts of the world highlighting regional structural deformation processes in response to tectonic stresses. Students are required to attend a weekend field trip during this course. Prerequisite: EASC 201, 204, 205, 206 and 207. Students who completed EASC 407 prior to fall 1998 may not take this course for credit.

**EASC 310W-3 Paleontology**

Principles of classification, morphology and development of the major groups of animals and plants in the geological record; the paleoecologic significance of fossils. Prerequisite: EASC 102 or 210. Recommended: BISC 102. Students with credit for EASC 203 may not take EASC 310 for additional credit. Writing.

**EASC 312-3 Stratigraphy**

The principles of stratigraphy, and their integration with sedimentary facies analysis. Techniques applicable to outcrop and subsurface correlation, as well as the principal stratigraphic paradigms and their application to the rock record are discussed. Prerequisite: EASC 201 and 204. Recommended: EASC 206, 302.

**EASC 313-3 Introduction to Soil and Rock Engineering**

An introduction to the engineering properties and behavior of soil and rock. Laboratory and field measurements of soil and rock properties. Applications in engineering design will be illustrated with case studies of slope stability, road design, foundations and underground excavations. Emphasis will be placed on the importance of soil and rock mechanics in the resources sector. Prerequisite: EASC 101, 204 or permission of instructor.

**EASC 314-3 Principles of Glaciology**

An introduction to the study of ice in the environment from a geophysical perspective, with attention to glaciers and ice sheets as (1) components of the global climate system, (2) indicators and archives of environmental conditions, (3) agents of catastrophic change, and (4) resources. Topics include the physical and chemical properties of ice, glacier and ice-sheet thermomechanics, dynamics of Greenland and Antarctica, ice cores, subglacial lakes, unstable ice flow, and resource exploitation in glacierized areas. Prerequisite: 60 units, including MATH 152 (with grade C or higher), PHYS 126 or PHYS 121 (with grade of C or higher), and GEOG 213 or permission of the instructor. Quantitative.

**EASC 317-3 Global Geophysics**

Application of geophysical methods to the study of the Earth's evolution and its interior structure: geometrical nature of plate tectonics on a sphere; the Earth's magnetic field and its use in reconstruction of past plate motions; earthquake seismology and understanding the deep interior, gravity and lithospheric flexure, radioactive decay and an absolute geological time scale; heat loss and mantle convection; structure of oceanic lithosphere; structure of continental lithosphere; the early Earth and the tectonics of other planets. Prerequisite: EASC 207 or permission of instructor. Quantitative.

**EASC 400-3 Selected Topics in Earth Sciences**

An advanced, in-depth treatment of a specialized area of earth sciences. Prerequisite: to be determined by instructor.

**EASC 401-3 Mineral Deposits**

The petrology and genesis of metalliferous ore deposits; description of classic ore deposits; the occurrence and exploitation of industrial and

non-metallic minerals. Prerequisite: EASC 201, 204, 208 and 301.

**EASC 402-3 Sedimentology**

Sediment transport in fluids, the formation, character and classification of internal structures in sediments and paleoenvironmental analysis. Prerequisite: EASC 302.

**EASC 403-3 Quaternary Geology**

Stratigraphy and history of the Quaternary Period with emphasis on glaciation, glacial sediments, and landforms. The course includes several field trips, including one or two weekend trips. (2-0-3) Prerequisite: EASC 201 and GEOG 313 or permission of instructor.

**EASC 404-3 Structural Geology II**

Application of advanced concepts in structural geology to a variety of tectonic problems; deformation mechanisms; flow concepts applied to ductile deformation; description and interpretation of microstructural fabrics; strain partitioning from grain scale to global scale. Prerequisite: EASC 204, 301 and 309.

**EASC 406-3 Field Geology III**

An advanced field study course that provides real-world examples of major topics in the earth sciences. The course includes both a classroom component throughout the term and a field component of about 2-3 weeks. The field component is usually held shortly after the spring examination period (generally late April to early May). The field component is an excursion to a variety of field sites that change yearly. Prior to student enrolment, the faculty member, in consultation with the students, will determine the field course location, and determine the mandatory supplementary course fees for that offering. Some offerings of EASC 406 may require overseas travel and possibly a significant change in the timing and cost of the field component. Students should be aware that they must also cover the costs of food and personal items on the field course. Prerequisite: EASC 306 and a minimum of nine other units in upper division earth science courses (or permission of the instructor). Recommended: EASC 309.

**EASC 408-3 Regional Geology of Western Canada**

The stratigraphy, structure and historical geology of western Canada. Terrane analysis. Important mineral and fossil sites will be discussed. Prerequisite: EASC 309. Students who completed EASC 305 prior to fall 1998 may not take this course for credit.

**EASC 410-3 Groundwater Contamination and Transport**

An introduction to contaminant hydrogeology and mass transport processes in groundwater regimes. Topics include natural groundwater quality, sources of contamination, for example from mine waste, agriculture, saltwater intrusion, and industrial activities, and the processes and principles governing mass transport, including advection, dispersion and diffusion. The course also explores methodologies for site investigation as well as various remediation methods. Prerequisite: EASC 412. Quantitative.

**EASC 411-3 Terrain Analysis**

Application and role of Quaternary Geology in terrain mapping and terrain analysis and will emphasize the British Columbia Terrain Classification System. Applications of terrain maps, including landslide, earthquake and volcanic hazard mapping will be discussed. The lab sessions will cover morphological mapping, surficial material genesis, geomorphic processes and finally, production of a terrain and terrain stability map. The course includes three days in the field to ground truth the map. Prerequisite: EASC 206, 303. Recommended: GEOG 252, 313.

**EASC 412-3 Groundwater Geochemistry**

Emphasis is on the fundamentals of water-rock interactions and the chemistry of natural waters, developing an understanding of the physical and chemical principles that govern the geochemistry of water within Earth's crust. Topics will include water sample collection and analysis, chemical thermodynamics, gas-water-rock interactions and geochemical modelling. The applications range from weathering and recharge to acid mine drainage, diagenesis and hydrothermal ore deposit formation. Prerequisite: EASC 208. Corequisite or prerequisite: EASC 304.

**EASC 413-3 Resource Geotechnics**

Application of geotechnics to the resource sector with particular emphasis on forestry and minerals. Topics covered will include: Engineering geological characterization, slope failure mechanisms in soil and rock, methods of slope stability analysis, techniques of slope reinforcement and stabilization, slope monitoring, road construction and deactivation, underground excavations and petroleum geotechnics. Brief case studies will be used to illustrate the influence of geotechnics in the forestry, mining and the petroleum industries. Prerequisite: EASC 313 or permission of instructor.

**EASC 416-3 Field Techniques in Hydrogeology**

This course is intended to complement the theoretical aspects of hydrogeology by providing students with hands-on experience using hydrogeological equipment, and implementing sampling and testing protocols. The course involves a series of pre-field session assignments consisting of the analysis and interpretation of geophysical, geochemical and surficial geology data, and a week at a hydrogeology field site on the Fraser River delta, British Columbia. After the field work, students will conduct extensive analysis and interpretation of data gathered during the field session, complete exercises and prepare a written report. The course runs for about three weeks following spring term final examinations. Prerequisite: EASC 304. Corequisite: EASC 410. Recommended: EASC 207 and/or 307. Quantitative.

**EASC 418-1 Terrain Stability: Assessment and Mitigation**

A field-based course dealing with site specific assessment of the areas to be logged or impacted by road construction. Topics covered will include terrain stability assessment field procedures, environmental impact and mitigation in forest terrains, forestry-related landslides, forest road construction and deactivation. Rock slope stability assessment. Prerequisite: EASC 313, 411 and 413.

**EASC 419-1 Forest Harvesting Technology**

A field-based course dealing with techniques used in the harvesting of timber; their impact and mitigation. Topics covered will include forest harvesting techniques (ground-based systems, cable systems, aerial systems, hand logging and horse logging), elements of operational logging (layout of cut blocks and road systems), and forest development plans. Prerequisite: EASC 313, 411 and 413.

**EASC 420-3 Petroleum Geology**

Elements of the petroleum system, including basin type, source rock origination, migration, and trapping mechanisms. Techniques used to identify and map potential hydrocarbon reservoirs in the subsurface, including geophysical methods, surface mapping, well log correlation, and core/chip sample descriptions will be discussed. This material will be presented in a context that demonstrates the life cycle of a hydrocarbon field from exploration (early), delineation (assessment), and production (mature) stages. Datasets available during different stages of development will be discussed in light of their pertinence to optimal reservoir performance. Prerequisite: EASC 304, 309.

**EASC 421-3 Volcanology**

An introduction to physical and chemical volcanology through a comprehensive examination of volcanic eruptions and their consequences. The main topics covered are the rheological properties of magmas and lavas, structure of volcanic landforms, eruption dynamics, monitoring and hazard assessment, the emplacement of volcanic deposits, extraterrestrial volcanism and the effects of eruptions on the environment. Prerequisite: EASC 207. Co/Prerequisite: EASC 301.

**EASC 491-1 Directed Readings**

A course in which reading and research, and/or field work will be supervised by a faculty member. Prerequisite: units including 30 units in earth sciences courses and permission of the department.

**EASC 492-2 Directed Readings**

A course in which reading and research, and/or field work will be supervised by a faculty member. Prerequisite: 75 units including 30 units in earth sciences courses and permission of the department.

**EASC 493-3 Directed Readings**

A course in which reading and research, and/or field work will be supervised by a faculty member. Prerequisite: 75 units including 30 units in earth sciences courses and permission of the department.

**EASC 499-9 Honors Thesis**

Will include experimental and/or theoretical research in earth sciences or a related discipline, and the preparation of a thesis (research report). Selection of a research topic and preparation of the thesis will be done in consultation with a faculty member in earth sciences. A research seminar will be delivered at the end of the semester. Prerequisite: 105 units, admittance to the honors program and consent of a thesis supervisor.

**EASC 600-0 Introduction to Graduate Studies**

A required course designed to acquaint new graduate students with the research strengths of the program, research facilities in the University, and its vicinity. Procedures and policies relating to preparation, conduct and presentation of thesis research will be discussed. Graded satisfactory/unsatisfactory.

**EASC 603-3 Field Techniques in Hydrogeology**

This course is intended to complement the theoretical aspects of physical hydrogeology and aqueous geochemistry covered at an undergraduate (or early MSc) level by providing students with hands-on experience using hydrogeological equipment (data loggers, pumps, chemical sampling equipment), implementing sampling and testing protocols, and observing state-of-the-art monitoring and geophysical tools. The course entails preparatory research and data interpretation on the hydrogeology of the Fraser delta (including surficial geology, regional geochemistry and geophysical characteristics), a week at a hydrogeology field site on the Fraser River delta (early May), the extensive analysis and interpretation of data gathered during the field session complemented with regional data acquired during preliminary investigations, the development of a large-scale simulation model of the groundwater flow system at the site, and the completion of a comprehensive hydrogeological report. The course normally runs for about three weeks following spring session final examinations. Note: This course has limited enrollment. Prerequisite: undergraduate courses in physical and chemical hydrogeology (or equivalent) and consent of the department.

**EASC 604-3 Deformation Mechanisms and Continental Tectonics**

This course will focus on increasing the level of understanding of the mechanisms by which rocks deform and the effect of environmental variables (effective pressure, temperature, strain rate, chemical environment, etc.) on these deformation mechanisms.

Lectures will cover flow concepts applied to ductile deformation, grain-scale to crustal-scale strain partitioning, and models of exhumation of metamorphic rocks. The link between far-field effects such as lithosphere rheology, climate and erosion, and orogenic style will also be discussed. Prerequisite: undergraduate level courses in structural geology and global tectonics, equivalent to EASC 204 and 309 (or permission of the instructor).

**EASC 605-3 Advanced Glaciology**

An advanced introduction to theoretical glaciology within a continuum mechanical framework. The course focuses on fundamentals of glacier and ice-sheet flow and the key surface and subsurface processes that drive them. Course content includes a brief review of tensor analysis and continuum mechanics, glacier mass and energy balance, the material properties and rheology of ice, the basic equations of glacier deformation, ice-sheet and shelf flow, basal processes, glacier hydrology, and unstable modes of flow. Prerequisite: permission of instructor.

**EASC 606-3 Advanced Field Methods in Earth Sciences**

Focuses mainly on the field description, measurement and interpretation of geological, geochemical and geophysical features, and may concentrate on certain aspects of bedrock or surficial geology. Includes methods of data acquisition, display and modeling. Field exercises may be augmented by directed readings and laboratory studies. Course costs depend on the location and duration of field work and the nature of related investigations. Prerequisite: permission of the instructor.

**EASC 607-3 Exploration Seismology**

Application of seismic methods of the delineation of hydrocarbon deposits and crustal structure. Travel time expressions for a layered Earth; Zoeppritz' equations; 2-D and 3-D seismic surveying methods; reflection data processing, including deconvolution and migration; amplitude versus offset methods and direct hydrocarbon detection; seismic wave propagation in Earth's crust; refraction inversion; principles of seismic interpretation. Prerequisite: EASC 417 or equivalent.

**EASC 608-3 Advanced Metamorphic Petrology**

Field relations, nature and origin of metamorphic and metasedimentary rocks, graphical treatment and interpretation of mineral assemblages and heat-flow regimes in the framework of global tectonics, with special emphasis on derivation of pressure-temperature-fluid conditions ranging from low-grade rocks through granulites to partial melts. Laboratory: petrographic techniques applied to the study of rock suites. Prerequisite: permission of the instructor.

**EASC 610-3 Petroleum Geology**

An introduction to the practical application of geological and geophysical concepts in the petroleum industry. The course will focus on the use of facies models, porosity and permeability, geophysical logs, drillstem tests, drilling, and production strategies in petroleum exploration and exploitation. Particular emphasis is placed on the geologist's role in the industry, both in discovering new hydrocarbons, and in improving recovery (through waterflooding and carbon-dioxide flooding) from existing hydrocarbon reservoirs. Prerequisite: Knowledge and/or experience in sedimentary geology, stratigraphy, and facies models.

**EASC 611-3 Sedimentology**

An advanced treatment of topics which may include processes of sedimentation, facies model concepts, applications of ichnology, and depositional environments with an emphasis on siliciclastic successions. Course content will be tailored to student interest, but generally will include both non-marine and marine processes of sedimentation

and resultant depositional systems. The development of effective field criteria for the interpretation of the sedimentary record will be emphasized.

**EASC 612-3 Stratigraphy**

Stratigraphic concepts of lithostratigraphy, biostratigraphy, chronostratigraphy and genetic stratigraphy. The course concentrates on genetic stratigraphy, with emphasis on allostratigraphy, genetic stratigraphic sequences and sequence stratigraphy. Students will critically assess each paradigm and its applicability to both the subdivision and the interpretation of the sedimentary record. Relative sea level changes and their effects on deposition will be discussed in relation to the preserved sedimentary record. Students will examine the utility of facies analysis in the various genetic stratigraphic frameworks and the viability of reconstructing the depositional history of sedimentary successions.

**EASC 613-3 Groundwater Modelling**

An introduction to groundwater modelling providing the relevant theory and practical experience to develop and test conceptual models, to recognize data requirements, and to identify the limitations of numerical models. State-of-the-art groundwater modelling software will be used. An emphasis is placed on modelling flow in the saturated zone, but unsaturated zone hydrology, solute transport, and density dependent flow are also covered.

**EASC 614-3 Subsurface Techniques**

Advanced topics in subsurface exploration methods. Methods of drilling; core description and analysis; well logging.

**EASC 615-3 Applied Geophysics**

Instrumentation, application and limitations of electrical, seismic, radar and gravity methods in the exploration for mineral resources and in engineering applications.

**EASC 616-3 Fluvial Systems**

Fluid mechanics of open channel flow; physical sedimentology and sediment transport in aqueous environments. Prerequisite: appropriate standing in Applied Mathematics and in Physics.

**EASC 617-3 Quaternary Geology**

Environments of glacial and proglacial deposits. Quaternary stratigraphy and dating methods with emphasis on the Cordillera.

**EASC 618-3 Tectonics of Sedimentary Basins**

Regional processes of subsidence and basin formation from a plate tectonics viewpoint. The course will examine the origins and general characteristics of convergent, divergent, intraplate and hybrid basins. Methods of discriminating basin origins from an understanding of depositional systems, stratigraphic analysis, provenance and compositional variations will be examined.

**EASC 619-3 Environmental Geoscience**

An examination of the concepts, methods and techniques used in advanced case studies of environmental geology, in fields including forestry, environmental geochemistry, earthquake and volcanic hazard, and urban planning.

**EASC 620-3 Volcanology**

Physical, chemical and tectonic aspects of volcanology examined with emphasis on processes of magma generation and evolution, styles of eruption, environments of deposition, and interpretation of volcanic facies. Prerequisite: undergraduate course in petrology and structural geology.

**EASC 621-3 Tectonics and Magmatism Convergent Plate Margins**

Geological processes at convergent plate margins are considered in the context of plate tectonic principles. Topics to be addressed include: driving forces of tectonic plates, mantle convection, geometry

of subducted slabs, ridge-trench intersections, generation of volcanic arcs, causes of anomalous magmatism, accretion of terranes, and transpression of orogenic float. Prerequisite: undergraduate structural geology and petrology courses.

#### **EASC 622-3 Principles of Ichnology**

The conceptual framework of ichnology with particular emphasis on the ethological (behavioral) classification of biogenic structures, as well as its applications to the ichnofacies concept and paleoenvironmental interpretation of the sedimentary record. Environmental stresses and organism responses will be integrated with conventional sedimentology to highlight the complex inter-relationships between infauna and the environments they inhabit. The genetic stratigraphic applications of ichnology will also be addressed. Prerequisite: advanced undergraduate sedimentology course.

#### **EASC 623-3 Groundwater Resource Evaluation**

In addition to examining groundwater resources (exploration, evaluation and management), this course expands upon the theory and use of aquifer tests and their respective methods of analysis for evaluating groundwater resources. Advanced methodologies for partially penetrating wells, leaky aquifers, anisotropic aquifers, double porosity type and fractured aquifers will be included. Computer applications will be emphasized. Prerequisite: undergraduate course in groundwater

#### **EASC 624-3 Geology of the Canadian Cordillera**

The stratigraphy, structure and historical geology of the Canadian Cordillera, examined from a plate tectonic perspective. Models of development of the various terranes and related entities, and their amalgamation to form the present Cordillera, will be examined in detail. Prerequisite: an undergraduate background that includes courses at any level in structural geology, plate tectonics, geochemistry, geophysics, petrology (sedimentary, metamorphic, and igneous), plus permission from the instructor.

#### **EASC 625-3 Issues in Canadian Cordillera Geology and Tectonics**

A reading and seminar course on topics related to the development and ongoing evolution of the Canadian Cordillera. Topics will be based on both graduate student areas of interest and on current 'hot topics' concerning this orogenic belt. One or more field trips might be conducted if there is sufficient interest and such trips would complement the topics of discussion. Prerequisite: an undergraduate background that preferably includes courses at any level in structural geology, plate tectonics, geochemistry, geophysics, petrology (sedimentary, metamorphic, and igneous). This background will be assessed by the instructor, whose specific permission must be obtained before enrolment.

#### **EASC 627-3 Carbonate Depositional Systems**

Focuses on the modern and ancient carbonate depositional system, including platform geometry, grain types, diagenesis, porosity development, climatic influence, and eustatic influence. Petrology of outcrops, cores, and thin sections will be discussed and applied to characterization of carbonate systems in the subsurface. Presents a combination of academic theory and practical applications used in the petroleum industry, especially in directed study exercises. Mandatory weekend field trip to classic carbonate outcrops in western Canada. Prerequisite: permission of instructor.

#### **EASC 703-3 Special Topics in Earth Sciences III**

#### **EASC 704-708-3 Special Topics**

Prerequisite: permission of the instructor.

#### **EASC 709-1 Directed Readings**

Prerequisite: permission of the instructor.

#### **EASC 710-2 Directed Readings**

Prerequisite: permission of the instructor.

#### **EASC 711-3 Directed Readings**

Prerequisite: permission of the instructor.

#### **EASC 898-6 MSc Thesis**

#### **EASC 900-901-1 PhD Research Seminar**

Prerequisite: enrolment in PhD program. Graded satisfactory/unsatisfactory.

#### **EASC 998-6 PhD Thesis**

Prerequisite: enrolment in PhD Program.

## **Economics ECON Faculty of Arts and Social Sciences**

#### **ECON 102-3 The World Economy**

An overview of the broad economic trends in the development of the world economy over the last five decades with reference to the major debates related to economic interdependence, development and growth, globalization, and the role of the major multilateral economic institutions (IMF, World Bank, OECD, ILO, UN). (lecture/tutorial) Students with credit for Economics courses at the 200 (or higher) division (excluding ECON 200 and 205) may not take ECON 102 for further credit. Breadth-Social Sciences.

#### **ECON 103-4 Principles of Microeconomics**

The principal elements of theory concerning utility and value, price and costs, factor analysis, productivity, labor organization, competition and monopoly, and the theory of the firm. Students with credit for ECON 200 cannot take ECON 103 for further credit. Quantitative/Breadth-Social Sciences.

#### **ECON 104-3 Economics and Government**

An introduction of broad, basic economic ideas applied to government finance, allocation, and procurement. Topics covered may include government size, health care, debt, social insurance, trade, and redistribution policies. Breadth-Social Sciences.

#### **ECON 105-4 Principles of Macroeconomics**

The principal elements of theory concerning money and income, distribution, social accounts, public finance, international trade, comparative systems, and development and growth. Students with credit for ECON 205 cannot take ECON 105 for further credit. Quantitative/Breadth-Social Sciences.

#### **ECON 110-3 Foundations of Economic Ideas**

A preliminary approach designed to familiarize students with economic ideas and methods of economic analysis. The focus will vary from term to term. Students with credit for ECON 100 cannot take ECON 110 for further credit. Breadth-Social Sciences.

#### **ECON 210-3 Money and Banking**

Banking theory and practice in a Canadian context; the supply theory of money; the demand for money and credit creation; monetary policy in a centralized banking system and in relation to international finance. Prerequisite: ECON 103 or 200 and 105 or 205. Students with credit for ECON 310 cannot take ECON 210 for further credit. Quantitative.

#### **ECON 250-3 Economic Development in the Pre-Industrial Period**

The pre-industrial period. History of the economic development of civilization from ancient times until the industrial revolution. Emphasis will be placed on the influence of geographical factors, discoveries and inventions, religion, and social organization and customs. Prerequisite: ECON 103 or 200 and ECON 105 or 205. Students with credit for ECON 150 cannot take ECON 250 for further credit. Quantitative.

#### **ECON 260-3 Environmental Economics**

Economic analysis of environmental problems (water and air pollution, etc.). Evaluation of market failures due to externalities and public goods. Market and non-market regulation of environmental problems. Prerequisite: ECON 103 or 200. Students with credit for ECON 360 cannot take this course for further credit. Quantitative.

#### **ECON 278-3 Economics Practicum I**

First term of work experience in the Economics Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: 30 units including ECON 103 or 200 and ECON 105 or 205. At least 12 of these 30 units must be completed at Simon Fraser University with a minimum CGPA of 2.75. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the preceding term.

#### **ECON 279-3 Economics Practicum II**

This is the second term of work experience in the Economics Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: economics lower division requirements and completion of 45 units at least 12 of which must be completed at Simon Fraser University, with a CGPA of 2.75. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the preceding term.

#### **ECON 282-3 Selected Topics in Economics**

The subject matter will vary from term to term. Prerequisite: to be determined by the instructor subject to approval by the department chair.

#### **ECON 290-3 Canadian Microeconomic Policy**

A general survey of Canadian microeconomic policy issues. The course covers topics such as regulation, taxation, environmental and resource policy, health care, education and income distribution. Prerequisite: ECON 103 or 200 and ECON 105 or 205. Quantitative.

#### **ECON 291-3 Canadian Macroeconomic Policy**

A general survey of Canadian macroeconomic policy issues. Topics will include the costs of inflation and unemployment, monetary and fiscal policy, the effects of government debt and exchange rate policy. Prerequisite: ECON 103 or 200 and ECON 105 or 205. Quantitative.

#### **ECON 300-3 Introduction to Economic Concepts and Issues**

The objective of this course is to introduce students to the economic approach to decision-making by individuals, firms and institutions. They will see how economic analysis can be used to interpret current economic issues and as an aid to the formation and evaluation of government policy. The course will focus on both microeconomic and macroeconomic concepts. By exploring economic issues, the course will encourage critical thinking and develop problem-solving skills. Prerequisite: this course is available only to students who are enrolled in the Integrated Studies Program. Breadth-Social Sciences.

#### **ECON 301-4 Microeconomic Theory I: Competitive Behavior**

Aspects of microeconomic theory involving competitive markets. Topics include the behavior of households and firms, partial equilibrium analysis of product and factor markets, and general equilibrium. Prerequisite: ECON 103 or 200 and ECON 105 or 205; MATH 157; two 200 division ECON or BUEC courses (excluding BUEC 232), 60 units. Students with a minimum grade of A- in both ECON 103 and ECON 105 can take ECON 301 after 30 units and are not required to meet the 200 division ECON or BUEC course requirements. Students seeking permission to

register based on ECON 103 and 105 grades must contact the Undergraduate Advisor in Economics. Quantitative.

### **ECON 302-4 Microeconomic Theory II: Strategic Behavior**

Aspects of microeconomic theory concerned with strategic behavior, imperfect information, and market failure. Topics include game theory and oligopoly; uncertainty and insurance; asymmetric information and market power, externalities and public goods, together with related issues in welfare economics. Prerequisite: ECON 301. Students who have taken ECON 383-3 in 1998-3 and 1999-3 cannot take this course for further credit. Quantitative.

### **ECON 305-5 Intermediate Macroeconomic Theory**

Concepts and methods of analysis of macroeconomic variables -- consumption, investment, government and foreign trade. Classical and Keynesian models compared; analysis of economic statics and dynamics. Prerequisite: ECON 103 or 200; ECON 105 or 205; MATH 157; two 200 division ECON or BUEC courses (excluding BUEC 232), 60 units. Students with a minimum grade of A- in both ECON 103 and ECON 105 can take ECON 305 after 30 units and are not required to meet the 200 division ECON or BUEC course requirements. Students seeking permission to register based on ECON 103 and 105 grades must contact the Undergraduate Advisor in Economics. Quantitative.

### **ECON 309-5 Introduction to Marxian Economics**

Examination of Marx's economic theory, with particular emphasis on capital, theories of surplus value, and the Grundrisse. Consideration of earlier work as the basis for studying the above. Identification of the critical differences between Marxian economic theory and the dominant schools of economic theory in North America. Prerequisite: ECON 103 or 200 and 105 or 205, or permission of the department; 60 units.

### **ECON 325-3 Industrial Organization**

Introduces students to the economics of imperfect competition. Topics covered include the theory of the firm, market structure, and various aspects of firm strategy such as pricing, advertising, product differentiation, and innovation. Related questions of public policy will also be addressed. Prerequisite: ECON 301; 60 units. Quantitative.

### **ECON 331-5 Introduction to Mathematical Economics**

The mathematical interpretation of fundamental economic concepts; demand, supply, competitive equilibrium. Application of the calculus to production and distribution theory, growth models and investment theory. Differential and difference equations in dynamic economic models. Introduction to activity analysis. Prerequisite: ECON 103, 105 and MATH 157 or 151; 60 units. Students who have completed MATH 232 or 251 cannot take ECON 331 for further credit. Quantitative.

### **ECON 342-3 International Trade**

Topics discussed in this course are: gains from trade in a classical world; the modern theory of international trade; factor price equalization; empirical tests and extensions of the pure theory model; economic growth and international trade; the nature and effects of protection; motives and welfare effects of factor movements; multinational enterprises; the brain drain; customs union theory; pollution control and international trade. Prerequisite: ECON 103 or 200 and 105 or 205; 60 units or permission of the department. Students with credit for ECON 442 cannot take this course for further credit. Quantitative.

### **ECON 345-3 International Finance**

Foreign exchange markets; determination of spot and forward exchange rates; Euro currency markets; balance of payments statistics; international adjustment theory; income price and exchange rate effects; the role of international short term capital flows; the international monetary system: gold standard, freely floating rates, dollar gold exchange standard, centrally created reserves. Prerequisite: ECON 103 or 200 and 105 or 205; 60 units or permission of the department. Students with credit for ECON 445 cannot take this course for further credit. Quantitative.

### **ECON 353-4 Economic History of Canada**

Analysis of leading issues in Canadian economic history. The historical experience of other areas will be examined when useful contrasts can be made. Prerequisite: ECON 301; 60 units.

### **ECON 354-3 Comparative Economic Institutions**

People in small scale societies face numerous economic problems and have devised a variety of institutions to solve them. Using detailed case studies as a source of empirical information, we will develop economic concepts and models that help to make sense of these institutional arrangements. Prerequisite: ECON 103 and 105; 60 units. Students who have taken ECON 387 in fall 1998 or fall 1999, or ECON 383 in fall 2001 or fall 2003 may not take this course for further credit.

### **ECON 355W-4 Economic Development**

Analysis of theories of economic development. Consideration will be given to the requirements of successful development, to aspects of international co-operation, and to procedures of economic planning. Problems of emerging countries and models of various developing economies will be studied. Prerequisite: ECON 103 or 200 and 105 or 205; 60 units. Students with credit for ECON 455 may not take ECON 355 for further credit. Writing/Quantitative.

### **ECON 362-4 Economics of Natural Resources**

Application of economic analysis to natural resource problems and efficient management practice; public policy considerations in respect to development and conservation; benefit-cost analysis. Prerequisite: ECON 301; 60 units. Quantitative.

### **ECON 368-3 Regional Economic Analysis**

Introduction to regional impact analysis. Analysis of economic models of industrial location and spatial equilibrium. Examination of regional growth theories and their policy implications. Presentation of techniques for analysis of regional economic structure and performance. Prerequisite: ECON 103 or 200 and 105 or 205; 60 units. Students with credit for ECON 365 may not take this course for further credit.

### **ECON 378-3 Economics Practicum III**

This is the third term of work experience in the Economics Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: economics lower division requirements and completion of 60 units, at least 12 of which must be completed at Simon Fraser University with a CGPA of 2.75. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the preceding term.

### **ECON 379-3 Economics Practicum IV**

This is the last term of work experience in the Economics Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: ECON 301-4 or ECON 305-5 and 75 units with a CGPA of 2.75. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the preceding term.

### **ECON 381-3 Labor Economics**

Analysis of the economics of the labor market with particular emphasis on wage determination, the concept of full employment, and manpower policies. Prerequisite: ECON 301; 60 units. Quantitative.

### **ECON 382-3 Selected Topics in Economics**

The subject matter will vary from term to term depending upon the interests of faculty and students. Prerequisite: to be determined by the instructor subject to approval by the department chair.

### **ECON 383-3 Selected Topics in Economics**

The subject matter will vary from term to term. Prerequisite: to be determined by the instructor subject to approval by the department chair.

### **ECON 387-3 Selected Topics in Economics**

The subject matter will vary from term to term. Prerequisite: to be determined by the instructor subject to approval by the department chair.

### **ECON 388-3 Introduction to Law and Economics**

An introduction to the economic analysis of law, emphasizing the concepts of transaction costs and property rights. A variety of topics will be analysed, ranging from the allocative effects of alternative property rights to contract tort and nuisance law, out-of-court settlements and alternative legal fee structures. Prerequisite: ECON 103 or 200; ECON 105 or 205; 60 units.

### **ECON 389-3 Selected Topics in Economics**

The subject matter will vary from term to term. Prerequisite: to be determined by the instructor subject to approval by the department chair.

### **ECON 390-3 Canadian Public Policy**

Theories of government policy making as applied to the Canadian economy. Specifically, behavioral theories and current Canadian case studies are used to explore both private and public decision processes and the role of policy analysts in that context. Prerequisite: ECON 103 or 200 and 105 or 205; 60 units. Quantitative.

### **ECON 392-3 Public Economics: Role of Government**

The study of the normative rationale for government in a market economy through an analysis of distributional issues, public goods, externalities, non-competitive market structures, and asymmetric information. Prerequisite: ECON 301. Quantitative.

### **ECON 393-3 Public Economics: Taxation**

The study of the public economics of taxation including the efficiency and distributional aspects of taxation, the incentive effects of taxation, tax incidence, tax evasion and fiscal federalism. Prerequisite: ECON 301. Quantitative.

### **ECON 398-3 Directed Studies**

Independent reading and research on topics selected in consultation with the supervising instructor. This course can only be taken once for credit towards a degree or diploma. Prerequisite: ECON 103 or 200 and ECON 105 or 205; 60 units.

### **ECON 402-3 Advanced Microeconomic Theory**

Advanced coverage of microeconomic theory for students intending to pursue graduate study in economics. Topics may include general equilibrium, game theory, and asymmetric information. Prerequisite: ECON 302 and 331. Students who have completed both MATH 232 and MATH 251 may substitute these courses for ECON 331. Entry into this course requires a minimum CGPA of 3.0 or a minimum grade of A- in both 301 and 302. Students seeking permission to enrol based on ECON 301 and 302 grades must contact the Undergraduate Advisor in Economics. Quantitative.

**ECON 403-3 Advanced Macroeconomic Theory**

Advanced coverage of macroeconomic theory for students intending to pursue graduate study in economics. Topics may include economic growth, business cycles, and monetary theory. Prerequisite: ECON 302, 305 and 331. Students who have completed both MATH 232 and MATH 251 may substitute these courses for ECON 331. Entry into this course requires a minimum CGPA of 3.0 or a minimum grade of A- in both ECON 302 and 305. Students seeking permission to enrol based on 302 and 305 grades must contact the undergraduate advisor in economics. Quantitative.

**ECON 404-3 Methodology of the Social Sciences**

Critical discussion of contemporary and original papers in the social sciences. Emphasis will be on the objectives, the logical aspects, and the testability of social science theories and models. Prerequisite: 70 units.

**ECON 409W-3 Seminar in Economic Thought**

Consideration of particular economic theorists, schools of thought or themes in economic thought. Focus will vary from term to term. Prerequisite: ECON 301 and 305, or permission of the department; 60 units. Writing.

**ECON 410-3 Seminar in Monetary Theory**

Analysis of money as an economic variable; role of money in micro and macroanalysis. Prerequisite: ECON 301 and 305. Quantitative.

**ECON 425-3 Industrial Organization: Imperfect Competition**

An in depth examination of firm behavior in the context of imperfect competition. Topics covered may include: monopoly and oligopoly pricing; product differentiation; market power; entry deterrence; antitrust laws; and regulation. Emphasis will be given to covering a limited number of issues in detail rather than attempting a broad survey of industrial organization theories. Prerequisite: ECON 302.

**ECON 426W-3 Industrial Organization: Governance and Institutions**

A study of how markets, firms and other institutions are organized using information and transaction cost theories. Topics covered may include: theories of the firm (governance, structure, ownership, signaling and screening behavior); theories of non-market institutions (marriage, non-profit organizations, governments); institutional theories of growth and economic history; and the organization of markets (reputations, contracts, vertical control). Emphasis will be given to covering a limited number of issues and theoretical perspectives in detail rather than attempting a broad survey of new institutional economics. Prerequisite: ECON 302. Writing.

**ECON 428-3 Seminar in Behavioral and Applied Economics**

This is a research course covering topics in experimental economics, tests and economic behavior, and issues in applied economics. Experimental economic methods, results, and their implications for economic analyses will be reviewed. Individual projects will be designed and carried out by participants. Prerequisite: ECON 302 and 305. Quantitative.

**ECON 431-5 Intermediate Mathematical Economics**

The application of input-output studies, linear programming and the theory of games to economic analysis. Dynamic models, general equilibrium models and the mathematics of marginal analysis. Prerequisite: ECON 301, 305 and 331; 60 units. Students who have completed MATH 232 and MATH 251 may substitute these courses for ECON 331. Quantitative.

**ECON 435-5 Econometric Methods**

The application of econometric techniques to the empirical investigation of economic issues. Prerequisite: ECON 301 and BUEC 333. Entry into this course requires a minimum CGPA of 3.0 or a minimum grade of A- in both ECON 301 and BUEC 333. Students seeking permission to enrol based on ECON 301 and BUEC 333 grades must contact the Undergraduate Advisor in Economics. Quantitative.

**ECON 443-3 Seminar in International Trade**

Focus will vary from term to term. Prerequisite: ECON 301, 305 and 342; or permission of the department; 60 units.

**ECON 446-3 Seminar in International Finance**

Focus will vary from term to term. Prerequisite: ECON 301, 305 and 345, or permission of the department; 60 units. Quantitative.

**ECON 448W-3 Seminar in the Economics of Crime**

Explores the economics of crime. Topics will include statistical information on crime, economic theories of crime, deterrence, organized crime and related topics. Prerequisite: ECON 302 and BUEC 333. Writing.

**ECON 450W-3 Seminar in Quantitative Economic History**

Focus will vary from term to term. Prerequisite: ECON 301 and 305. Writing/Quantitative.

**ECON 451-3 Seminar in European Economic History**

A detailed examination of the major issues in European economic history. Prerequisite: ECON 301 and 305; 60 units. Students with credit for ECON 351 may not take ECON 451 for further credit.

**ECON 452W-3 Seminar in Economic Prehistory**

Topics will vary but may include the biological evolution of economic preferences, economic behavior in hunting and gathering societies, the transition from foraging to agriculture, the emergence of inequality, hierarchy, warfare, cities, and the state, and mechanisms of social collapse. Prerequisite: ECON 302. Students who have taken ECON 482 in the summer of 2004 may not take this course for further credit. Writing.

**ECON 453-3 Seminar in the Economics of Education**

The application of economic theory and empirical analysis to issues related to the role of education in economic growth and individual earnings, the organization of the education system and education policy. Specific topics covered will vary from term to term. Prerequisite: ECON 301. Students who have taken ECON 482 in fall 2005 may not take this course for further credit.

**ECON 454W-3 Seminar in the Economics of the Family**

An economic analysis of behavior within the family, institutional aspects of the family, and the economic role of families. Topics include bargaining, household production, intra-family transfers, fertility, marriage, divorce and other topics like dowries, footbinding and mate matching behavior. Prerequisite: ECON 301. Students who have taken ECON 496 in spring 2006 may not take this course for further credit. Writing.

**ECON 455W-3 Seminar in Economic Development**

Topics in economic development. Prerequisite: ECON 302 and 305. Writing/Quantitative.

**ECON 460-3 Seminar in Environmental Economics**

Focus will vary from term to term. Prerequisite: ECON 302. Quantitative.

**ECON 478-3 Economics Practicum V**

This is an optional term of work experience in the Economics Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: ECON 301, 305, one 400 division course and 90 units and a CGPA of 2.75. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the third week of the preceding term.

**ECON 480-3 Seminar in the Economics of Labor Market Policy**

Seminar focusing on public policy as it relates to employment and income security. Special emphasis will vary from term to term, but may include such topics as examinations of current manpower, welfare and public insurance programs, labor legislation, and private institutional practices (such as union-management pension arrangements) that may affect income security. Prerequisite: BUEC 333 and ECON 381.

**ECON 482-484-3 Selected Topics in Economics**

The subject matter will vary from term to term depending upon the interests of faculty and students. Prerequisite: to be determined by the instructor subject to approval by the department chair.

**ECON 490-3 Seminar in Public Choice**

The application of economic theory to political market place. Topics may include the economics of constitutions, voting, democracy, bureaucracy, rent-seeking, and redistribution. Prerequisite: ECON 301 and 305; 60 units. Quantitative.

**ECON 492-3 Seminar in Public Economics**

This seminar course considers topics such as the potential role for government through an analysis of distributional issues, public goods, externalities, non-competitive market structures, and asymmetric information. It may also include topics like the incentive effects of taxation, tax incidence, tax evasion and topics in fiscal federalism. Prerequisite: ECON 392 or 393 and ECON 302. Quantitative.

**ECON 496-3 Selected Topics in Economics**

The subject matter will vary from term to term depending upon the interests of faculty and students. Prerequisite: to be determined by the instructor subject to approval by the department chair.

**ECON 498-3 Directed Studies**

Independent reading and research on topics selected in consultation with the supervising instructor. This course may not be repeated for additional credit. Prerequisite: ECON 301 and 305 and permission of the undergraduate chair of the department; 60 units.

**ECON 499-6 Honors Seminar in Economics**

The purpose of this course is to permit the student to expand and develop a paper that has been prepared for a previous course into an honors paper. Prerequisite: ECON 302, 305, a minimum CGPA of 3.0; pre- or co-requisite: ECON 435. Joint Honors students may use ECON 301 in place of 302. Quantitative.

**ECON 750-0 Practicum I**

First term of work experience in the Co-operative Education Program. Prerequisite: completion of core MA degree requirements of ECON 802, 807 (or 808), 835, and 836 with a minimum GPA of 3.0.

**ECON 751-0 Practicum II**

Second term of work experience in the Co-operative Education Program. Prerequisite: ECON 750.

**ECON 752-0 Practicum III**

Third term of work experience in the Co-operative Education Program. Prerequisite: ECON 751 and department approval.



**ECON 798-4 Introduction to Mathematical Economics**

Applications of static optimization techniques, matrix algebra, differential and difference equations in economic models.

**ECON 802-4 Microeconomic Theory I**

An examination of the economic theory of market prices with reference to behavior of individual households, firms, and markets. Special emphasis will be placed on the implications of individual behavior for the allocation of resources. Prerequisite: ECON 331. Offered once a year.

**ECON 803-4 Microeconomic Theory II**

The course subsequent to ECON 802 which covers advanced Microeconomic theory on a dynamic and general equilibrium basis. Prerequisite: ECON 802. Offered once a year.

**ECON 804-4 Advanced Topics in Microeconomic Theory**

The course following ECON 802 and 803 which covers such topics as equilibrium theory, axiomatic analysis, stability analysis, income distribution, dynamic micro models, and models of non-market economics. Prerequisite: ECON 802 and 803 or equivalent.

**ECON 807-4 Macroeconomic Theory and Policy**

An examination of basic macroeconomic theory, empirical macroeconomic data and models, macroeconomic analysis, and application to economic developments and policy issues. Prerequisite: ECON 798 or equivalent. Offered once a year.

**ECON 808-4 Macroeconomic Theory**

An analysis of current theories of aggregate economic behavior. Topics covered in this course may include long-run growth, dynamic general equilibrium models, and business cycle analysis. Prerequisite: ECON 798 and 403 (or equivalent). Students who have taken ECON 805 cannot take ECON 808 for further credit. Offered once a year.

**ECON 809-4 Advanced Macroeconomic Theory**

This course covers advanced macroeconomic theory topics. Emphasis will be placed on current research techniques. Topics covered may include: capital and growth theory, real business cycle models, models of fiat money, asset pricing models, endogenous growth models, development traps, macroeconomic complementarities, co-ordination failures, and adaptive behavior in macroeconomic models. Prerequisite: ECON 808. Students who have taken ECON 806 cannot take 809 for further credit.

**ECON 810-4 Monetary Theory**

An examination of theories of the supply and demand for money in micro- and macro-contexts, from the classical analysis to the most recent developments. Emphasis will be placed upon the role of money in economic activity, the precise nature of its demand and supply conditions, and policy-implications of theoretical conclusions with regard to money.

**ECON 811-4 Advanced Monetary Theory**

Selected topics in monetary theory and policy.

**ECON 815-4 Portfolio Theory**

A study of optimum portfolio selections and diversification of financial assets including cash vis-a-vis different classes of utility functions of final wealth. Also, an examination of the behavior of speculative prices and rates of return. Prerequisite: ECON 331. Offered once a year. This is the same course as BUS 815.

**ECON 817-4 Theory of Capital Markets**

A study of capital market equilibrium theories, risk allocation, valuation models under perfect and imperfect markets and their empirical testing.

Prerequisite: ECON 331, 835. Offered once a year. This is the same course as BUS 817.

**ECON 818-4 Advanced Topics in Finance**

Extensions of advanced topics beyond those covered in BUEC 815 and 817. Prerequisite: BUEC 815, 817. This is the same course as BUS 818.

**ECON 825-4 Industrial Organization**

A presentation and critical examination of the industrial organization models; includes a review of mainstream and current theoretical literature, and important empirical work in the field. Prerequisite: ECON 802.

**ECON 826-4 Industrial Organization II**

This course examines topics specific to the theory of the firm. Classes will focus on theories of transaction cost, principal-agency, and the theory of contracts. Particular attention will be given to the strategic interaction of the agents.

**ECON 828-4 Experimental Economics**

The course will deal with experimental methodology and design. A number of topics will be covered in the three main areas of experimental economics: markets, games and strategic interaction, and individual decision-making. Students will be expected to design and conduct their own experiments under the supervision of the instructor.

**ECON 831-4 Mathematical Economics**

Various equilibrium models of micro and macro theory will be examined with emphasis on their solution, stability conditions and the uniqueness of solutions. Prerequisite: ECON 331.

**ECON 832-4 Computational Methods in Economics**

The first part of the course will focus on dynamic optimization problems, with an emphasis on dynamic programming. Applications may include growth, business cycles, monetary and fiscal policy, and optimal contracts. The second part of the course will focus on models of learning and bounded rationality. Genetic and stochastic approximation algorithms will be studied. Applications may include the stability of rational expectations equilibria, the evolution of institutions and social conventions, and models of robust control and Knightian uncertainty. Prerequisite: ECON 802, 807 or 808, or with the approval of the instructor.

**ECON 835-4 Econometrics**

An introduction to econometric theory. Applications of econometric methods to both time series and cross-section data. Prerequisite: ECON 435 and ECON 798. Offered once a year.

**ECON 836-4 Applied Econometrics**

A 'hands-on' course in implementing econometric techniques for empirical investigation of economic issues. Prerequisite: ECON 835 or equivalent.

**ECON 837-4 Econometric Theory I**

The theory of the general linear model and the implications of basic econometric problems such as multicollinearity, autocorrelated residuals, errors in variables and heteroscedasticity. The use of dummy and lagged variables, simultaneous equation models. The identification problem. Estimation of over-identified equations. Prerequisite: ECON 835 or equivalent. Offered once a year.

**ECON 838-4 Econometric Theory IIA**

This course presents advanced topics in time series econometrics, with an emphasis on model building, estimation, inference and forecasts in finance and macroeconomics. Univariate and multivariate models of stationary and nonstationary time series in time and frequency domains will be studied. General topics will include specification testing, method of moments estimators, applications of maximum likelihood, simulation and bootstrap methods, and estimation and inference in nonlinear models. These will be

presented in the context of ARMA models, impulse-response functions, vector autoregressions and state space models, frequency domain methods, unit roots, cointegration, models of volatility, extreme value analysis and risk management, long-memory models, structural change, hidden-markov models, high frequency finance and wavelets. Prerequisite: ECON 837.

**ECON 839-4 Econometric Theory IIB**

Presents advanced topics in econometric theory in a microeconomic setting. Topics will include specification testing, method of moments estimators, applications of maximum likelihood, simulation and bootstrap methods, and estimation and inference in nonlinear models. These will be presented in the context of cross-sectional and panel data, including discrete choice models, limited-dependent variable models, and duration models. Prerequisite: ECON 837.

**ECON 840-4 Theory of International Trade**

The analytical course dealing with the pure theory of international trade. The motivation of supply and demand in international trade, the dynamic basis of trade, the role of the price mechanism and of income changes in international trade. Specific problems may be considered, such as the theoretical case for free and multilateral trade, and the theory of customs unions.

**ECON 842-4 International Monetary Economics**

Balance of payments theory, foreign exchange theory, and adjustment processes. A range of applied problems will be dealt with such as the operation of exchange rates, analysis of exchange rate systems, exchange control and the processes of short and long term capital movements in international trade.

**ECON 843-4 Current Problems in International Trade**

Detailed studies of a limited number of international economic problems. The selection of topics will depend to some extent upon the expressed interests of the students.

**ECON 850-4 Methodology and Sources in Economic History**

A close examination of the work and methodology of leading economic historians. Study of methodology of selected works in economic history, with special emphasis on the identification of implicit theories and assumptions. Application of quantitative approaches and economic theory to selected problems. Independent work.

**ECON 851-4 Economic History of Europe**

An examination of theories and controversies from the transition of feudalism to capitalism. Comparative study of the emergence and subsequent evolution of industrialization. How economic institutions affect the character and pace of economic development. Regional disparities and economic growth in given countries. Relationship between economic growth and international expansion. Examination of declining sectors, stagnation, institutional changes in the 20th century.

**ECON 853-4 Economic History of North America**

Effects of the North Atlantic economy on the pace and character of Canadian and American economic development. The role of staple exports and the linkages to manufacturing and transportation developments. Canadian national policy, with emphasis on regional effects, internal consistency and comparison to similar policies in the United States. Factors for growth and cyclical changes in the 20th century. In all the above areas, an attempt will be made to apply quantitative techniques of the new economic history to the problems of economic change.



**ECON 855-4 Theories of Economic Development**

Characterization of non-growing economies; mechanics of the process of economic development; the role of economic and non-economic factors; structural transformation in economic development.

**ECON 856-4 Theories of Economic Growth**

Equilibrium analysis and economic growth; determinants of growth; steady state and steady growth; technical progress and equilibrium growth. Prerequisite: ECON 808.

**ECON 857-4 Studies in Economic Development**

Examination of the characteristics of a given underdeveloped economy; allocation of resources and factor strategies; historical or contemporary comparisons of public policy and development.

**ECON 859-4 Population Economics**

An examination of the determinants and consequences of population growth. Population projections. Fertility and mortality differentials. The impact of the business cycle on fertility and migration. The theory of the optimum population under static and dynamic conditions. Neo-Malthusianism. The economics of high fertility in densely populated and underdeveloped areas.

**ECON 860-4 Environmental Economics**

The analysis of the role of the natural environment in economic system. All economic activity creates waste products (pollution) which must be disposed of back into the natural environment. The socially efficient amount of waste generation and disposal is determined and methods of reaching this level evaluated. This involves the theoretical and empirical determination of the costs and benefits of waste generation and a thorough discussion of the role of government policies: taxes, standards, tradeable emission permits versus private market initiatives (bargaining and green goods) under a variety of assumptions about the economic system.

**ECON 861-4 Natural Resource Economics**

Basic issues of intertemporal valuations. The economic theory of natural resource management for non-renewable resources, fisheries and forests. The effects of market structure and taxation on intertemporal supply patterns will be considered.

**ECON 863-4 Fisheries Economics**

Theoretical analysis of fisheries exploitation, emphasizing the characteristics of a common property resource and the economic expression of biological factors. Problems of productivity against the background of national fisheries regulations and international agreements. Public policies in respect of the fisheries, with their social and economic implications.

**ECON 864-4 Studies in Economic Fisheries Management**

Analysis of economic fisheries management techniques derived from the study of a variety of actual fisheries management projects. Prerequisite: ECON 863, or permission of the instructor.

**ECON 865-4 Regional Economic Theory**

The theoretical aspects of regional economics, particularly the following topics; the concept of a region, location theory, theories of regional economic growth, and techniques for regional analysis. Prerequisite: ECON 331 recommended.

**ECON 867-4 Regional Development Problems**

An applied course in regional economics. Topics include the following: concepts of regional planning, development planning techniques, study of Canadian regional development problems. Prerequisite: ECON 865.

**ECON 869-4 Transportation Economics**

Emphasis on costs, demand and pricing of transportation services. Additional topics to be studied include government promotion of transport, transport regulation and the economic effects of transportation improvements. Recommended: ECON 331.

**ECON 877-4 Methodology in Economic Theory**

Topics to be discussed include theories of rationality; social theories involved in the economic concept of equilibrium; the role and status of economic theories and models; methodology versus sociology of economics; theories of economic knowledge; realism of assumptions and value premises in economics.

**ECON 878-4 History of Economic Thought Prior to 1870**

The origins and development of economic thought from early times until 1870 with special emphasis on mercantilist, physiocratic, classical, Malthusian and socialist doctrines.

**ECON 879-4 History of Economic Thought Since 1870**

The development of economic thought since 1870 will be examined with special emphasis on the evolution of marginal utility theory, general and partial equilibrium analysis, business cycle theories, Keynesian and post-Keynesian economics.

**ECON 881-4 Labor Economics**

Theoretical analysis of labor in the context of a national resource. Critical examination of the aspects of quantity, quality, allocation and utilization of human resources. Topics given particular attention include labor force participation, structural employment, human capital, incomes policies and the concept of an active manpower policy. Prerequisite: ECON 835.

**ECON 886-4 Industrial Relations**

Collective bargaining: process, content, consequences. Bargaining organizations: goals, structure, decision-making processes. Industrial relations systems in varying economic and institutional environments. Public policy and industrial relations.

**ECON 888-4 The Economics of Legal Relationships**

An analysis of the economic effects of constraints imposed by common, statute and constitutional law. Topics will include: transaction cost, common property, regulation, negligence and torts, 'free' goods, price controls, non-profit agencies, crime and malfeasance, custom, nature of the firm under various legal guises and the anarchy state dichotomy.

**ECON 889-4 Seminar in Law and Economics**

An enquiry into the resource allocational and distributional implications of current and alternative legal arrangements. The economic rationale for and effects of the development of various legal doctrines will be considered. Topics may include anti-combines legislation, compensation and public regulation, and market regulation for purposes of safety, consumer information and income maintenance of producers.

**ECON 890-4 Public Economics: Expenditure**

The study of the role of the public sector in a market economy. Topics may include social choice, issues of inequality, public goods, externalities, asymmetric information, and political economy.

**ECON 891-4 The Economics of Public Choice**

Applies economic theory to the analysis of non-market, political choice. Some of the topics studied will be coalition formation and rational voter behavior; allocations under various property rights systems; optimal constitutions; public sector externalities; federalism; discrimination, nationalism and crime.

**ECON 892-4 Public Economics: Taxation**

The study of the public economics of taxation including income taxation, commodity taxation, and capital taxation. The focus is on the efficiency and distributional aspects of taxation which include the incentive effects of taxation, tax incidence, tax evasion, tax competition, and fiscal federalism.

**ECON 893-4 Introduction to Marxian Economics**

Examination of Marx's economic theory, with particular emphasis on capital, theories of surplus value and the Grundrisse.

**ECON 895-4 Comparative Economic Systems**

Comparative study of capitalist, communist, socialist and mixed forms of national economic organization, with emphasis on the allocation of resources and distribution of income.

**ECON 900-0 PhD Field Paper**

In the summer term following the completion of a PhD student's theory comprehensive exams, the student will enrol in this course. In consultations between the student, the graduate chair, and faculty, the student will be assigned a supervisor for the course. During the term, the student will write a research paper in their field of interest. A satisfactory completion of the course is through the presentation of the paper as an economics department thesis proposal seminar. Graded as satisfactory or unsatisfactory.

**ECON 911-913-4 Selected Topics in Economics**

Offered by arrangement.

**ECON 921-923-4 Directed Readings**

Supervised reading in a particular field of specialization. Offered by arrangement.

**ECON 990-6 PhD Thesis****ECON 991-6 MA Thesis****ECON 997-6 MA Exam**

Prerequisite: ECON 802, 807 or 808, and 836 and significant written work in one or more MA courses (e.g. A term paper).

**ECON 998-6 MA Essays****ECON 999-6 MA Project****Education EDUC Faculty of Education****EDUC 100-3 Selected Questions and Issues in Education**

An introduction to a small but representative sample of basic questions and issues in education. Students will examine questions relating to: the concept or idea of education; learning and the learner; teaching and the teacher; and more generally, the broader contexts of education. This course also introduces students to different ways of exploring educational questions and issues — from philosophical and critical analysis, to historical and cross-cultural studies, to empirical research. Cannot be taken for credit by students with credit for 300 and 400 level education courses. Breadth-Humanities.

**EDUC 100W-3 Selected Questions and Issues in Education**

An introduction to a small but representative sample of basic questions and issues in education. Students will examine questions relating to: the concept or idea of education; learning and the learner; teaching and the teacher; and more generally, the broader contexts of education. This course also introduces students to different ways of exploring educational questions and issues from philosophical and critical analysis, to historical and cross-cultural studies, to empirical research. Cannot be taken for credit by students with credit for 300 and 400 level education courses. Writing/Breadth-Humanities.

**EDUC 211-3 Mathematical Experience I: Numbers and Beyond**

Utility and aesthetics of mathematical experience is presented through the exploration of selected topics. Prerequisite: Students who have credit for MATH 151, MATH 154, MATH 157 need special permission to participate in EDUC 211 and EDUC 212. Quantitative/Breadth-Science.

**EDUC 212-3 Mathematical Experience II: Shape and Space**

Utility and aesthetics of mathematical experience is presented through the exploration of selected topics. Prerequisite: Students who have credit for MATH 151, MATH 154, MATH 157 need special permission to participate in EDUC 211 and EDUC 212. Quantitative/Breadth-Science.

**EDUC 220-3 Introduction to Educational Psychology**

A survey of educational research and theories concerning motivation, learning, development, and individual differences in classroom settings. May be applied towards the certificate in liberal arts.

**EDUC 222-3 Research Methods in Educational Psychology**

An introductory survey of research methods used in developing and testing theories in educational psychology. Illustrations are drawn from published research in educational psychology. Corequisite: EDUC 220-3 Quantitative.

**EDUC 230-3 Introduction to Philosophy of Education**

Provides prospective teachers and others interested in education an opportunity to examine a variety of educational problems from a philosophical perspective. The central concern of the course is to elucidate the nature of education as a phenomenon distinct from such activities as training, schooling, and socialization. May be applied towards the certificate in liberal arts. Breadth-Humanities.

**EDUC 240-3 Social Issues in Education**

Social functions of the school; education and socialization; social, political, economic and cultural influences on the institutions and practices of education. May be applied towards the certificate in liberal arts.

**EDUC 250-3 Studies in the History of Education in the Western World**

A study of major trends in educational practice from antiquity to the present. May be applied towards the certificate in liberal arts. Breadth-Humanities/Social Sciences.

**EDUC 252-4 Introduction to Reflective Practice**

Provides opportunities for prospective educators to begin their development as reflective practitioners. Through readings, classroom activities and discussions, and interactions with students and practicing teachers, students will be exposed to various educational issues and questions. They will be given time to explore their own values and beliefs about education and teaching. Time may be spent observing in a selection of educational settings, and there may be opportunities to work with learners individually, and in small and large groups. Students with credit for EDUC 401 or holding a teaching certificate may not take this course for credit.

**EDUC 260W-3 Learning and Teaching through Technology**

Provides a practical and theoretical exploration of technology use in K-12 classroom settings. Introduces current technologies that potentially impact student learning as well as a variety of issues and problems surrounding the use of learning technologies in schools. Also offers opportunities to explore technology-based innovations not yet broadly used in schools. Prerequisite: 30 units. Writing.

**EDUC 298-299 Special Topics**

Course will explore issues of current concern. Subjects to be taught and the exact assignment of units (2 or 3) will be announced prior to the beginning of each term. Course may be on a pass/fail basis. Variable units: 2, 3. A maximum of 12 units in education special topics courses may be used towards a bachelor of education degree.

**EDUC 311-3 Foundations in Aboriginal Education, Language, and Culture**

An introduction to Aboriginal education in Canada and BC. There will be a critical examination of historical and contemporary issues in education and an exploration of culturally based Aboriginal education grounded in Aboriginal philosophies. Prerequisite: 60 units. Breadth-Humanities.

**EDUC 313-3 Numeracy and Society**

Conceptions of numeracy in contemporary society; consequences of innumeracy; enhancing personal numeracy skills; examination of numeracy across the curriculum. Prerequisite: EDUC 401/402. This course is designed for students NOT working in a Mathematics or Science specialization. Quantitative.

**EDUC 315-3 Individual and Developmental Differences in Language Acquisition**

A review of theories of language acquisition and their relationship to child communication disorders. Topics include: theories of language acquisition; individual and developmental differences in language acquisition; language structure and use in children with diverse disabilities, autism spectrum disorder, sensory disabilities and emotional and behavioral disabilities, interdisciplinary approaches to early intervention in the home, school and community. Prerequisite: EDUC 220 or PSYC 250

**EDUC 320-3 Instructional Psychology**

Examines theories of instruction and research about learning, motivation, individual differences, and social environments as foundations for designing instruction. Topics include: models of cognition; models of motivation and beliefs; metacognition, self-regulated learning, and learning skills; problem solving and transfer; cognitive processing models of instruction in mathematics, science, social studies, reading and composition. Prerequisite: EDUC 220.

**EDUC 322-3 The Social Lives of School Children**

An overview of theory, research and practice concerning social emotional development and social interactions and relationships in the school context. Emphasis on the role of peer relationships in development and the role of the school in supporting positive interactions. Prerequisite: EDUC 220 or PSYC 250.

**EDUC 323-3 Introduction to Counselling Theories**

Survey of theories undergirding counsellor and teacher interventions aimed at promoting emotional growth, development and personal change. Examination of theories and their sociological, cultural and philosophical contexts. Exploration of links between frequently used interventions and the implicit theories underlying these strategies. Students who have credit for EDUC 425 cannot take EDUC 323 for further credit. Prerequisite: EDUC 220 or equivalent, and 60 units.

**EDUC 324-3 Foundations of Multicultural Counselling**

Provides an introduction to multicultural counselling and human diversity with an emphasis on culture, gender, ethnicity, socioeconomic status, religion, age, and abilities. Prerequisite: EDUC 220 or PSYC 250 and 60 units.

**EDUC 325-3 Assessment for Classroom Teaching**

A survey of assessment methods that contribute to improving teaching and learning, and for making judgements and decisions about qualities of teaching, the classroom environment, and student achievement and growth. Topics include: goal and task analysis, validity and reliability, observing and assessing classroom processes and environments, self-report methods, assessing student achievement, published tests of achievement and aptitude, marking and reporting. Prerequisite: EDUC 220.

**EDUC 326-3 Classroom Management and Discipline**

An examination of contemporary approaches to classroom management and discipline, including a consideration of legal, organizational and administrative issues. The major goal of the course is to enable students to comprehend the basic principles and tenets of a number of management approaches and to translate these principles into specific teaching strategies and skills. Prerequisite: EDUC 401/2 or one of EDUC 100, 220, 230, 240.

**EDUC 327-3 Self, Psychology and Education**

A critical examination of theoretical and empirical programs of inquiry in educational psychology that are concerned with the self (e.g., self-esteem, self-concept, self-directed or self-regulated learning). Students will participate in a wide-ranging seminar that considers topics such as the relationship between personal and social being, historical perspectives on the self, the formation of social identity, the roles of memory, imagination, and narrative in selfhood, the development of agency and self, and education and personhood. Prerequisite: 60 units, including one of EDUC 220, 230, 240 or 250.

**EDUC 328-3 Career Education and Career Counselling**

An introduction to theories of career choice, adjustment and development. Emphasis on critical evaluation of established theories that are influential in the development of career education curricula and in the practice of career counselling. Prerequisite: EDUC 220 or 401/402.

**EDUC 330-3 Movement Language Elements for Dance in Education**

In this experiential course students will develop an understanding of the movement concepts (action, space, time, force, relationship) which are the framework for making and teaching dance. This course will explore dance as a non-verbal expressive language, and will introduce students to a variety of aspects of dance within the curriculum. Previous dance training is not required. Prerequisite: 60 units including six units in EDUC courses.

**EDUC 332-3 Naturalistic Observations in Early Learning Settings**

Investigates the use of naturalistic observation and photo documentation techniques that can be used as a method of formative assessment leading to responsive ECE curriculum planning. Prerequisite: PSYC 250 and 45 units.

**EDUC 339-3 Practicum 1**

First term of work experience for the Faculty of Education Co-Operative Education Program. Provides opportunity to integrate theory and practice. This course is open only to co-op students. The co-op coordinator must be contacted at the beginning of the term prior to enrolment for this course. Units from this course do not count towards the units required for an SFU degree.

**EDUC 341-3 Literacy, Education and Culture**

An introduction to the study of literacy from an interdisciplinary perspective, one which explores the role of literacy in social development, the economic and cultural values of literacy, and the effects of

literacy on cognitive processes. The particular concern of this course is with the formal transmission of literacy in educational institutions. The course will especially address the varying conceptions of literacy that educators have traditionally valued, and the research that aims to explain, justify, and prescribe educational practices intended to increase literacy. This course is required for the certificate in literacy instruction. Prerequisite: 60 units.  
Breadth-Humanities.

#### **EDUC 349-3 Practicum II**

Second term of work experience for the Faculty of Education Co-operative Education Program. Provides opportunity to integrate theory and practice. This course is open only to co-op students. The co-op coordinator must be contacted at the beginning of the term prior to enrol in this course. Units from this course do not count towards the units required for an SFU degree.

#### **EDUC 351-3 Teaching the Older Adult**

This is a basic course in adult education for students from all disciplines, of particular interest to those working (or preparing to work) with older adults. The goal is to assist students to develop more effective strategies for meeting the needs of an aging population through education. Prerequisite: 60 units.

#### **EDUC 352-4 Building on Reflective Practice**

Building on the experience of EDUC 252, prospective educators will continue to develop their reflective practice. Various educational issues related to the caring for learners and the creation of learning communities will be explored. Students will spend time in educational settings exploring the importance of connected educational experiences for learners. Students with credit for EDUC 401 or holding a teaching certificate may not take this course for credit. Prerequisite: EDUC 252.

#### **EDUC 355-4 Theatre in an Educational Context**

Deals with teaching theatre in an educational context. It will develop knowledge of theatre skills, and a variety of approaches and techniques for teaching theatre and theatre in the schools. Prerequisite: 60 units.

#### **EDUC 358-3 Foundations of Educational Technology**

A survey of major traditions of research and development in educational technology, including the arguments and assumptions they make about what constitutes a valuable educational outcome. Focus on analyzing and understanding educational technologies as cultural tools that are both shaped by and in turn shape teaching and learning in K-12 schools. Prerequisite: 60 units.

#### **EDUC 367-4 Teaching Children from Minority Language Backgrounds in Elementary Classrooms**

For prospective or practicing elementary school teachers who are interested in enhancing educational practice for children of minority language backgrounds (those often labelled as ESL students) within the context of their mainstream classrooms. Participants will consider theory and research in second language learning, examine recommendations for classroom practice and develop plans for practice relevant to their own educational milieu. Prerequisite: 60 units.

#### **EDUC 370-4 International and Intercultural Education**

Practical and theoretical approaches to international and intercultural education, including examinations of the relationships between culture, learning and schooling, and contemporary issues in teacher education from an international perspective. Prerequisite: completion of at least 60 units, including 3 units in Education.

#### **EDUC 371-4 School Health Education**

Explores health concepts, health behaviors, and health concerns of school-aged children and youth. Focuses on comprehensive and co-ordinated school health programs, innovative instructional strategies, and health-promotion initiatives to create healthy school communities. Prerequisite: 60 units; or permission of instructor.

#### **EDUC 371W-4 School Health Education**

Explores health concepts, health behaviors, and health concerns of school-aged children and youth. Focuses on comprehensive and co-ordinated school health programs, innovative instructional strategies, and health-promotion initiatives to create healthy school communities. Prerequisite: 60 units; or permission of instructor. Writing.

#### **EDUC 378-3 Teaching Core French with Special Emphasis on Authentic Documents**

A modern language methodology course designed to develop skills necessary to instruct a basic Core French program. Begins at SFU and is completed at Laval University in Quebec City. Curricular emphasis includes the practical use of authentic documents. Prerequisite: EDUC 401/402. Corequisite: EDUC 480 or 481. Basic knowledge of French recommended.

#### **EDUC 380-4 Introduction to Teaching French in Canadian Contexts**

For students contemplating becoming teachers of Immersion, Core French at the secondary level, or for intermediate and middle school generalists who want to have an introductory overview of second language teaching in general and French education in British Columbia specifically. The general objective is to help prospective French teachers to better understand Canadian bilingualism, its historical, sociopolitical and cultural context, as well as gain a basic understanding of French education programs in British Columbia. The language of instruction will be French, but the class will be "English-friendly". Prerequisite: FREN 301 or 304 or 370 or equivalent.

#### **EDUC 382-4 Diversity in Education: Theories, Policies, Practices**

An examination of the impact of social diversity on schooling in Canada exploring contemporary issues and perspectives on diversity education as they relate to cultural, ethnic, racial, linguistic, religious, economic, and gender differences. Prerequisite: 60 units. Students who have received credit for EDUC 441, EDUC 382-4 Special Topics from Fall 2003-3 on, cannot take EDUC 382 for further credit.

#### **EDUC 383-399 Special Topics**

Explores major issues of present concern. Subjects to be taught and the exact assignment of units and prerequisites will be announced prior to the beginning of each term. Course may be given on a pass/fail basis. A maximum of 12 units in education special topics courses may be used toward a bachelor of education degree. Variable units 2,3,4,6.

#### **EDUC 401-8 Introduction to Classroom Teaching**

A half term of observation and experience in a BC school during which two students work as a team with a teacher selected by school authorities and appointed by Simon Fraser University as a school associate. Students observe, teach and participate in school routines and programs. Grading is on a pass/withdraw basis. (Not offered in summer term.)

#### **EDUC 401W-8 Introduction to Classroom Teaching**

A half term of observation and experience in a BC school during which two students work as a team with a teacher selected by school authorities and appointed by Simon Fraser University as a school associate. Students observe, teach and participate in school routines and programs. Grading is on a pass/withdraw basis. Writing.

#### **EDUC 402-7 Studies of Educational Theory and Practice**

A half term of study which provides students with workshops, seminars, and lectures designed to introduce them to basic curriculum and methods appropriate for the age/grade level in which they expect to teach. Students will also be given an introduction to generic teaching skills, as well as to current issues in educational theory and practice. Grading is on a pass/withdraw basis. (Not offered in summer term.) Corequisite: EDUC 401.

#### **EDUC 402W-7 Studies of Educational Theory and Practice**

A half term of study which provides students with workshops, seminars, and lectures designed to introduce them to basic curriculum and methods appropriate for the age/grade level in which they expect to teach. Students will also be given an introduction to generic teaching skills, as well as to current issues in educational theory and practice. Grading is on a pass/withdraw basis. Corequisite: EDUC 401. Writing.

#### **EDUC 404-0 Coursework Semester**

Students undertake 15 upper division units in Education to complete the professional development program requirements. Prerequisite: EDUC 401/402.

#### **EDUC 405-15 Teaching Semester**

A full term of classroom experience supervised by University appointed school associates. The school placement is appropriate to the grade level and subject specialties which the student expects to teach after graduation. Grading is on a pass/withdraw basis. (Not offered in summer term.) Prerequisite: EDUC 401/402.

#### **EDUC 406-12 Supervised Observation and Teaching**

Education 406 is designed for those who need to meet BC certification requirements. It is a supervised orientation/observation/teaching sequence of approximately ten weeks, in a BC public school. This practicum is designed as an opportunity to familiarize students with the British Columbia school system and update their teaching skills. Prerequisite: permission will not be given to students without previous teaching experience. Grading will be on a pass/withdrawal basis. Students with credit for EDUC 407 may not take EDUC 406. EDUC 406 is not applicable toward the credit requirements for a degree or diploma, i.e. not counted in total units.

#### **EDUC 411-3 Investigations in Mathematics for Secondary Teachers**

Students examine secondary mathematics from an advanced standpoint, focusing on problem solving, investigating connections among various topics and representations, and situating secondary mathematics in a broader context, both mathematical and historical. Prerequisite: One of MATH 152, 155 or 158. Corequisite: EDUC 415 or appropriate math background and permission of instructor. Quantitative.

#### **EDUC 412-4 Designs for Learning: Secondary Language Arts**

Focuses on teaching secondary school language arts and addresses aspects of the theory and practice of language arts education. Students examine their own thinking about language arts education through critical reflection, work with the prescribed curriculum, and explore various ways to develop engaging learning experiences for young adults within a consistent framework using appropriate instructional materials and methods. Prerequisite: EDUC 401/402. Students who have credit for EDUC 472 prior to the 2001-2 term cannot take EDUC 412 for further credit.

**EDUC 412W-4 Designs for Learning: Secondary Language Arts**

Focuses on teaching secondary school language arts and addresses aspects of the theory and practice of language arts education. Students examine their own thinking about language arts education through critical reflection, work with the prescribed curriculum, and explore various ways to develop engaging learning experiences for young adults within a consistent framework using appropriate instructional materials and methods. Prerequisite: EDUC 401/402. Students who have credit for EDUC 472 prior to the 2001-2 term cannot take EDUC 412 for further credit. Writing.

**EDUC 414-4 Designs for Learning: Secondary Social Studies**

Focuses on teaching secondary school social studies and addresses aspects of the theory and practice of social studies education. Students examine their own thinking about social studies education through critical reflection, work with the prescribed curriculum, and explore various ways to develop engaging learning experiences for young adults within a consistent framework using appropriate instructional materials and methods. Prerequisite: EDUC 401/402. Students who have credit for EDUC 474 cannot take EDUC 414 for further credit.

**EDUC 415-4 Designs for Learning: Secondary Mathematics**

Focuses on teaching secondary school mathematics. Students explore mathematical learning, their own mathematical thinking and curriculum; and plan mathematical instruction within a consistent framework using appropriate instructional materials and methods. Prerequisite: EDUC 401/402 and one of MATH 152, 155 or 158. Students who have credit for EDUC 475 prior to the 2001-2 term cannot take EDUC 415 for further credit. Quantitative.

**EDUC 416-4 Designs for Learning: Secondary Science**

Focuses on teaching secondary school science. Students explore the sciences and aspects of learning science; examine their own scientific thinking; work with the prescribed curriculum; and plan science learning experiences within a consistent framework using appropriate instructional materials and methods. Prerequisite: EDUC 401/402. Students who have credit for EDUC 476 prior to the 2001-2 term cannot take EDUC 416 for further credit.

**EDUC 422-4 Learning Disabilities**

A study of conceptual and historic foundations of learning disabilities and an introduction to the methodologies of diagnosis and of learning disabilities. Prerequisite: PSYC 250 or corequisite of EDUC 315 or 473.

**EDUC 423-4 Helping Relationships**

Introduction to the rationale for and the practice of basic counselling skills. Emphasis on the development of counselling skills as a means of establishing effective helping relationships in educational settings. Prerequisite or Corequisite: EDUC 323.

**EDUC 424-4 Learning Disabilities: Laboratory**

Supervised experience in analysis and evaluation of treatment strategies to be used with classroom students having learning disabilities. Prerequisite or corequisite: EDUC 422.

**EDUC 426-4 Teaching Children and Youth with Special Needs**

An introduction to the field of special education including studies of the definitional criteria and characteristics of major categories of special need, and the distinctive instructional challenges associated with these categories. The course focuses on the special learning needs of school age students, both elementary and secondary school levels, and

emphasizes both the analysis of issues and treatment needs across the array of special needs. Prerequisite: 60 units.

**EDUC 427-4 Teaching Students with Special Needs in Inclusive Settings.**

A review of classroom teaching practices that support learning for children with high-incidence disabilities (e.g., learning disabilities, Attention Deficit Disorder, mild intellectual disabilities, moderate behavior disorders). Topics include: introduction to inclusive teaching, collaboration partnerships and procedures, teaching students with high-incidence disabilities, developing effective teaching skills, improving classroom behavior and social skills, promoting inclusion with peers, enhancing motivation and affect, assessment and teaching in the content areas. Prerequisite: EDUC 422 and either 401/402 or permission of the instructor for students with experience working with children with high-incidence disabilities.

**EDUC 428-4 Nature and Nurture of Gifted Students**

Concepts and practices related to the nature and nurture of the potential for giftedness in educational settings will be introduced. Theoretical and historical foundations of common practices in gifted education will be covered. Grading will be on a pass/fail basis. Prerequisite: EDUC 220 or PSYC 250 or PYSC 302 and EDUC 401/402.

**EDUC 428W-4 Nature and Nurture of Gifted Students**

Concepts and practices related to the nature and nurture of the potential for giftedness in educational settings will be introduced. Theoretical and historical foundations of common practices in gifted education will be covered. Grading will be on a pass/fail basis. Prerequisite: EDUC 220 or PSYC 250 or PYSC 302 and EDUC 401/402. Writing.

**EDUC 430-4 Designs for Learning: Dance**

For students and teachers with some movement and dance experience who are planning to teach dance in school or recreational settings. Students will continue experiential and theoretical explorations of movement language framework concepts with increasing emphasis on expressive, formal and critical aspects of dance and movement education. Prerequisite: EDUC 401/402.

**EDUC 433-4 Philosophical Issues in Curriculum**

Examines fundamental philosophical issues involved in designing, evaluating, or changing educational curricula. Such issues as the nature and justification of educational curriculum, the components of a rational curriculum, the nature of knowledge and its differentiation, curriculum integration and the education of the emotions. Also deals with such current issues as the place of behavioral objectives in education, the hidden curriculum and the sociology of knowledge. Prerequisite: 60 units including six units in EDUC courses or EDUC 401/402.

**EDUC 435-4 Infusing Global Perspectives into Curriculum**

An examination of the rationale for and concepts of global education including its content, methods and skills objectives, and its place in existing provincial curricula. Prerequisite: 60 units, including three of which must be in Education.

**EDUC 437-4 Ethical Issues in Education**

Ethical problems in education are identified and examined. Four major areas of concern are explored: 1. the normative character of education as a whole; 2. the justification of education; 3. ethical questions related to equality, autonomy, interpersonal relationships, and rights in education; 4. moral education and values education. Prerequisite: EDUC 230 or EDUC 401/402 or permission of the instructor.

**EDUC 439-3 Practicum III**

Third term of work experience for the Faculty of Education Co-operative Education Program. Provides opportunity to integrate theory and practice. This course is open only to co-op students. The co-op co-ordinator must be contacted at the beginning of the semester prior to registration for this course. Units from this course do not count towards the units required for an SFU degree.

**EDUC 441-4 Multicultural and Anti-racist Education**

Focuses on developing approaches for multicultural and anti-racist teaching. Topics include: diversity of race, language and culture among learners; identifying the operation of racism, prejudice and discrimination in classrooms and schools; becoming familiar with a variety of approaches such as: co-operative learning, culturally appropriate assessment, and community involvement to counteract and prevent negative classroom and school dynamics; identifying bias in curriculum resources; and locating entry points in selected curriculum areas (e.g. language arts, social studies, art, music, etc.) for integrating approaches which employ a range of multicultural/anti-racist curriculum resources. Prerequisite: EDUC 401/402. Students who have received credit for EDUC 382: Diversity in Education: Theories, Policies, Practices cannot take EDUC 441 for further credit.

**EDUC 445-4 Legal Context of Teaching**

Designed to provide education students, teachers, counsellors and school administrators with a comprehensive understanding of the legal issues and potential legal liabilities encountered in the BC public school system. Special attention is devoted to the legal dimensions and consequences of routine classroom and administrative activity. Topics include: sexual abuse by school board employees; negligence and supervision; private lifestyles and community standards; discipline and corporal punishment; sexual harassment in the workplace; responsibility for curriculum fulfillment; liability outside school hours; and the AIDS controversy. Prerequisite: 60 units.

**EDUC 446-4 Law for the Classroom Teacher**

Provides a fundamental knowledge of law to teach law-related content in the BC curriculum: social studies, science, personal planning, language arts, P.E., social responsibility, and business. Topics: Canadian legal system, legal history, legal reasoning, dispute resolution strategies, the role of the courts, and family, environmental, property and contract laws. Prerequisite: 60 units.

**EDUC 448-4 Teaching about Justice, Law and Citizenship**

The justification and practise of law-related education in the K-12 curriculum are the subjects of this methodology course. Students will examine the place of law in the curriculum, existing resources and appropriate teaching strategies and will have the opportunity to develop unit plans and curriculum materials. Emphasis is on developing and implementing law-related programs in the classroom. Prerequisite: 60 units including six in education courses. Teaching experience is recommended.

**EDUC 449-3 Practicum IV**

Fourth term of work experience for the Faculty of Education Co-operative Education Program. Provides opportunity to integrate theory and practice. This course is open only to co-op students. The co-op co-ordinator must be contacted at the beginning of the term prior to enrolment for this course. Units from this course do not count towards the units required for an SFU degree.

**EDUC 450-4 Classroom French Curriculum Studies**

Intended for students who would like to gain insight into teaching French as a second language while

improving their knowledge of the French language and of the associated culture in a classroom context. The language of instruction will be French. Corequisite: EDUC 401/402.

#### **EDUC 451-4 Classroom French Curriculum Practices**

Helps prospective and practicing French teachers better understand the pedagogical and cultural relevance of a variety of French language registers and of their significance to second language teaching. Prerequisite: When the course is offered in French, 60 units and 12 units of French or equivalent. When the course is offered in English, 60 units.

#### **EDUC 452-8 Environmental Education**

Examines the educational problems entailed in developing human awareness and understanding of the environment. Explores environmental issues through a multi-disciplinary approach and relates historical and contemporary problems in human-environment interactions to school curricula from the elementary to the secondary level. Includes a laboratory component. Grading will be on a pass/fail basis. A \$46 field activity fee will be levied in this course. Normally offered in summer session only. Prerequisite: EDUC 401/402. Breadth-Science.

#### **EDUC 456-4 Models of Contemporary Arts in Education**

Major conceptions of educational value in the contemporary arts, and application of these ideas to the development of visual arts programs in the schools. Prerequisite: 60 units.

#### **EDUC 457-4 Drama and Education**

Deals with theory, curricula and methodologies in drama education. Topics will include a selection from the following: aims of drama education; drama as methodology; role of the teacher in the drama classroom; evaluating students in drama classes; creative drama; the use of improvisation and storytelling; incorporating film and video work into drama classes; developing major projects with students such as choral dramatization, docudrama, anthology, and readers theatre; introducing scene work, stagecraft, and theatre history. Prerequisite: EDUC 401/402.

#### **EDUC 459-4 Instructional Activities in Physical Education**

Focuses on theory and curriculum of school physical education programs. Emphasis is given to the movement education orientation as it pertains to the various program activities and approaches applicable to primary, intermediate and secondary levels. Prerequisite: EDUC 401/402.

#### **EDUC 464-4 Early Childhood Education**

Current trends, issues and research relating to the education of young children. Prerequisite: EDUC 401/402 or PSYC 250.

#### **EDUC 465-4 Children's Literature**

Historical, sociological and literary perspectives on literature for children. Prerequisite: 60 units.

#### **EDUC 466-4 Early Childhood Education: Curriculum and Instruction**

Designed to expand on the theoretical foundations provided in EDUC 464 engaging students in the critical analysis of programming for early learners by surveying a variety of program types and providing both an overview of content areas for further discussion and inquiry specific to curriculum and instruction. Prerequisite/Corequisite: EDUC 464.

#### **EDUC 467-4 Curriculum and Instruction in Teaching English as an Additional Language**

Designed for prospective and beginning teachers to learn more about theory, research, and practice in teaching English as an additional language (EAL) in today's multilingual classrooms. Exploring an integrated approach working with learners to develop language skills through designing and delivering

curriculum, instruction and assessment. Prerequisite: 90 units including three EDUC units.

#### **EDUC 468-4 Sociocultural Perspectives on Language, Cognitive Development and EAL Instruction**

Designed for prospective and beginning teachers to learn more about theory and research in language acquisition, sociocultural understandings of language development and thought, bilingualism and cognition, linguistic multicompetence. Exploring the implications of research and theory for the teaching and learning of EAL in classroom contexts. Prerequisite: 60 units including 6 units in Education courses.

#### **EDUC 469-4 Music Education as Thinking in Sound**

Understanding the language of music, both historical and contemporary, and use of electronic and acoustic instruments in the general music classroom. Prerequisite: 60 units.

#### **EDUC 471-4 Curriculum Development: Theory and Practice**

Explorations of curriculum theory and processes of development with applications at different levels and in several subject areas. Prerequisite: 60 units.

#### **EDUC 472-4 Designs for Learning: Elementary Language Arts**

Focuses on developing knowledge, skills and strategies to create a rich and stimulating language arts program in the elementary classroom. Issues in reading, writing, speaking and listening will be examined through current theory and teaching practice. Prerequisite: EDUC 401/402. Students who have credit for EDUC 472 prior to 2001-2 term cannot take EDUC 472 for further credit.

#### **EDUC 472W-4 Designs for Learning: Elementary Language Arts**

Focuses on developing knowledge, skills and strategies to create a rich and stimulating language arts program in the elementary classroom. Issues in reading, writing, speaking and listening will be examined through current theory and teaching practice. Prerequisite: EDUC 401/402. Students who have credit for EDUC 472 prior to 2001-2 term cannot take EDUC 472 for further credit. Writing.

#### **EDUC 473-4 Designs for Learning: Reading**

Offers theoretical and practical information about teaching reading in K-12 general education settings. Prerequisite: EDUC 401/402.

#### **EDUC 473W-4 Designs for Learning: Reading**

Offers theoretical and practical information about teaching reading in K-12 general education settings. Prerequisite: EDUC 401/402. Writing.

#### **EDUC 474-4 Designs for Learning: Elementary Social Studies**

Focuses on teaching elementary school social studies and addresses aspects of the theory and practice of social studies education. Students examine their own thinking about social studies education through critical reflection, work with the prescribed curriculum, and explore various ways to develop engaging learning experiences for children within a consistent framework using appropriate instructional materials and methods. Prerequisite: EDUC 401/402. Students who have credit for EDUC 474 prior to 2001-2 term cannot take EDUC 474 for further credit. Students with credit for EDUC 414 cannot take EDUC 474 for further credit.

#### **EDUC 475-4 Designs for Learning: Elementary Mathematics**

Focuses on teaching elementary school mathematics. Students explore mathematical learning, their own mathematical thinking, and curriculum; and plan mathematical instruction within a consistent framework using appropriate instructional materials and methods. Prerequisite: EDUC 401/402. Students

who have credit for EDUC 475 prior to 2001-2 term cannot take EDUC 475 for further credit. Quantitative.

#### **EDUC 476-4 Designs for Learning: Elementary Science**

Focuses on teaching elementary school science. Students explore science, aspects of learning science, and their own scientific thinking; work with the prescribed curriculum; and plan science learning experiences within a consistent framework using appropriate instructional materials and methods. Prerequisite: EDUC 401/402. Students who have credit for EDUC 476 prior to 2001-2 term cannot take EDUC 476 for further credit.

#### **EDUC 477-4 Designs for Learning: Art**

Introduces students to the main ideas, skills, materials, resources, understandings and organizational concerns involved in teaching art in schools. Prerequisite: EDUC 401/402.

#### **EDUC 478-4 Designs for Learning: Music**

Designed for in-service and pre-service teachers who would like to acquire the skills that will allow them to teach music competently and creatively. They will learn basic conducting techniques, design their own curriculums and have an opportunity to prepare and teach their own lesson plans. Previous musical experience is welcome, but not required. Prerequisite: EDUC 401/402.

#### **EDUC 479-4 Designs for Learning: Physical Education**

Consideration is given to the pedagogical principles underlying the development of inclusive physical programs at the primary, intermediate and secondary levels. Involves practical consideration of instructional strategies and curriculum planning in physical education, particularly as they apply to alternative environment activities. Prerequisite: EDUC 401/402. Corequisite: EDUC 459.

#### **EDUC 480-4 Designs for Learning: French as a Second Language**

Deals with a variety of approaches, teaching strategies and curricula, for teaching French as a second language in elementary and secondary schools. Prerequisite: EDUC 401/402. Instruction given in French.

#### **EDUC 480W-4 Designs for Learning: French as a Second Language**

Deals with a variety of approaches, teaching strategies and curricula, for teaching French as a second language in elementary and secondary schools. Prerequisite: EDUC 401/402. Instruction given in French. Writing.

#### **EDUC 481-4 Designs for Learning: French Immersion Programs and Francophone Schools**

Focuses on research and theories of language learning in bilingual programs and minority contexts, pedagogical approaches and curricula for teaching in French Immersion programs and Francophone elementary and secondary schools. Prerequisite: EDUC 401/402 (French Immersion). Instruction given in French.

#### **EDUC 481W-4 Designs for Learning: French Immersion Programs and Francophone Schools**

Focuses on research and theories of language learning in bilingual programs and minority contexts, pedagogical approaches and curricula for teaching in French Immersion programs and Francophone elementary and secondary schools. Prerequisite: EDUC 401/402 (French Immersion). Instruction given in French. Writing.

#### **EDUC 482-4 Designs for Learning: Information Technology**

Students will develop a critical understanding of information technologies in education and learn how to integrate these technologies into classroom

settings. An emphasis is on teaching strategies and methods as they complement the guidelines set forth in the BC Information Technology Curriculum. Prerequisite: 60 units.

### **EDUC 483-8 Designs for Learning: Curriculum Studies**

Development of conceptual and technical skills through workshops, seminars, and directed and independent study. Deals with human development and learning in the school. Stress will be placed on approaches to individualizing instruction and to integrating the curriculum in different subject areas. It will normally be taught by two or more faculty members. Prerequisite: EDUC 401/402.

### **EDUC 485-8 Designs for Learning: Writing**

Designed to help students become better teachers of writing. Students will be involved in four aspects of teaching writing: teacher as writer, teacher as teacher of writing skills, teacher as researcher, teacher as developer of curriculum. Techniques for providing effective writing experiences will be studied, demonstrated and practised. Students will observe, use and evaluate these techniques. Course content: teacher as writer -- writing skills, audience, purpose, writing process, self-evaluation. Teaching writing -- research, skill acquisition, self-disclosure, risk and creativity, thought and discipline, evaluation. Teacher as researcher -- reflective observation, analysis of data, program evaluation, peer support systems. Teacher as developer of curriculum -- student writing, drama, literature, use of texts. Prerequisite: EDUC 401/402.

### **EDUC 485W-8 Designs for Learning: Writing**

Designed to help students become better teachers of writing. Students will be involved in four aspects of teaching writing: teacher as writer, teacher as teacher of writing skills, teacher as researcher, teacher as developer of curriculum. Techniques for providing effective writing experiences will be studied, demonstrated and practised. Students will observe, use and evaluate these techniques. Course content: teacher as writer -- writing skills, audience, purpose, writing process, self-evaluation. Teaching writing -- research, skill acquisition, self-disclosure, risk and creativity, thought and discipline, evaluation. Teacher as researcher -- reflective observation, analysis of data, program evaluation, peer support systems. Teacher as developer of curriculum -- student writing, drama, literature, use of texts. Prerequisite: EDUC 401/402. Writing.

### **EDUC 486-488 Special Topics**

Sections will deal with major issues of present concern. Subjects to be discussed will be announced during the term prior to that in which the course is to be offered. The exact assignment of units (3, 4 or 6) and prerequisites for the special topics offering will be announced prior to the beginning of each term. A maximum of 12 units in education special topics courses may be used toward a bachelor of education degree. Variable units 3, 4, 6.

### **EDUC 490-492 Directed Study**

Directed study in education under the supervision of a faculty member. Prerequisite: 60 units and a CGPA of 3.0, consent of supervising faculty member, and approval of the director of undergraduate programs. A maximum of three directed studies courses will be approved for a maximum of 12 units. Directed studies courses may not parallel regularly taught courses. A student may take a maximum of two directed studies courses with the same faculty member. Applications are available in the undergraduate programs office. Variable units 2, 4.

### **EDUC 493-4 Directed Studies in Environmental Education**

A multidisciplinary approach for educators in formal and informal settings with an interest in learning more about environmental issues. Students will consider

multiple perspectives on the goals, values and interdisciplinary nature of environmental education, review locally available curricular materials and obtain a grounding in appropriate models for learning and teaching environmental topics. Prerequisite: 60 units and a CGPA of 3.0, EDUC 452, consent of supervising faculty member, and approval of the director of undergraduate programs. Applications are available in the undergraduate programs office.

### **EDUC 495-498 Special Topics**

Sections will deal with major issues of present concern. Subjects to be discussed will be announced during the term prior to that in which the course is to be offered. The exact assignment of units (3, 4, or 6) for the special topics offering will be announced prior to the beginning of each term. Prerequisite: this will be announced prior to the beginning of each term. A maximum of 12 units in education special topics courses may be used toward a bachelor of education degree. Please refer to SA 333 Sociology of Education, as this course is also accepted as education credit. Variable units 3, 4, 6.

### **EDUC 702-2 Directed Readings**

### **EDUC 703-3 Directed Readings**

### **EDUC 704-4 Directed Readings**

### **EDUC 705-5 Directed Readings**

### **EDUC 710-714 Special Topics**

Variable units 3, 4, 5.

### **EDUC 720-5 Special Topics**

Variable units 3, 4, 5.

### **EDUC 799-3 Supervised Counselling Clinic I**

An initial clinical course where students develop their basic and beginning counselling skills and increase their conceptual understanding of theoretical perspectives of counselling through practice, including counselling processes and case conceptualizations. Graded on a satisfactory/unsatisfactory basis. Prerequisite: EDUC 870, 874.

### **EDUC 800-3 Supervised Counselling Clinic II**

An advanced clinical courses where students further develop their counselling skills and increase their conceptual understanding of theoretical perspectives of counselling through practice, including counselling processes and case conceptualizations. Graded on a satisfactory/unsatisfactory basis. Prerequisite: EDUC 799.

### **EDUC 801-3 Counselling Practicum I**

Supervised clinical experience for students enrolled in the MEd or MA Counselling Psychology Program. Graded on a satisfactory/unsatisfactory basis. Prerequisite: EDUC 800.

### **EDUC 802-3 Counselling Practicum II**

Advanced supervised clinical experience for students enrolled in the MEd or MA Counselling Psychology Program. Graded on a satisfactory/unsatisfactory basis. Prerequisite: EDUC 801.

### **EDUC 803-5 Educational Program Supervision**

The course systematically examines school-based variables amenable to administrative manipulation and associated with student achievement.

### **EDUC 804-5 Selected Problems in Educational Uses of Technology**

### **EDUC 805-5 Social Development in the School Context**

This course involves an examination of theoretical, empirical and practical literature on social and emotional development in young children and its application to education and school settings.

### **EDUC 806-5 Selected Problems in Higher Education**

### **EDUC 807-5 The Foundations of Action Research**

Surveys the philosophical and sociological dimensions, moral and ethical considerations, and

empirical findings of action research. Only students admitted by Field Programs are allowed to enrol for this course.

### **EDUC 809-5 Graduate Seminar**

### **EDUC 811-5 Fieldwork I**

Graded on a satisfactory/unsatisfactory basis.

### **EDUC 812-5 Fieldwork II**

Graded on a satisfactory/unsatisfactory basis.

### **EDUC 813-5 Organizational Theory and Analyses**

This course critically examines organizations in which educational leaders work from different theoretical perspectives and in light of research evidence. It also critiques several past and current reform initiatives, and explores specific topics in-depth. A central and pervasive question of the course concerns organizational purposes, especially with respect to learning, and how these purposes are served by organizational structures and processes.

### **EDUC 815-5 Administrative Processes**

This course examines the administrative world in which educational leadership occurs, including: administrative ideologies, theories of practice and institutional arrangements; values analysis; and technical fields such as financial, legal and human resources. This is complemented by an introduction to current research findings and to distinct theoretical traditions (e.g. structural-functional, interpretive and critical) in which research examining administrative processes is conducted. Topical issues and problems will be explored within the conceptual framework of the course.

### **EDUC 816-5 Developing Educational Programs and Practices for Diverse Educational Settings**

Investigates theories and issues associated with developing educational programs and practices in various educational contexts. Addresses the development of new programs and their implementation in schools and other educational settings.

### **EDUC 817-5 Policy Processes**

This course examines three interrelated aspects of policy studies as a critical function of the educational leadership role: conceptual and theoretical foundations concerning policy, policy actors, and policy processes; current research in the field; and topical issues and problems. It also considers social, economic and political contexts (e.g. technologization, corporatization, pluralism) and how they affect education.

### **EDUC 818-5 Leadership Studies**

This course examines three interrelated aspects of educational leadership studies of conceptual and theoretical foundations, with a particular emphasis on ethics of leadership; current research in the field, including feminist and cultural critiques; and topical issues and problems of leadership practice. Considerations of leadership character and role, power and authority in organizational relationships, and organizational goal achievement are central to the course.

### **EDUC 819-5 Studies in Teacher-Student Interaction**

Consideration of systems for analysing teacher interaction and their use in analysing the student's own classroom teaching. The course will also deal with models of instruction designed to achieve various categories of educational objectives.

### **EDUC 820-5 Current Issues in Curriculum and Pedagogy**

Focuses on educational issues, trends and practices which impact teaching and learning in schools and other educational settings.

**EDUC 821-5 Philosophical Issues in Classroom Practices**

Philosophical examination of assumptions underlying practical problems in classroom teaching. Some of the main issues examined include: distinguishing teaching, indoctrination, and conditioning; the use of compulsion, manipulation, and discipline; student/teacher relationships; child-centered education; alternative education; punishment and behavior modification. It also focuses on assumptions underlying such practices as play, learning by discovery, individualized instruction, and open education.

**EDUC 822-5 Evaluation of Educational Programs**

Processes used in program evaluation; including test and other measurement devices; and political, social and philosophical issues relating to the evaluation of educational programs.

**EDUC 823-5 Curriculum and Instruction in an Individual Teaching Speciality**

An intensive examination of developments in a curriculum area selected by the student. In addition the course will deal with major philosophical and historical factors that influence the present state and future directions of curriculum and instruction.

**EDUC 824-5 Seminar in Second Language Teaching**

Theories of sentence, discourse, and context in second language education; teaching scientific genres and humanities genres, use of dictionaries and glossaries, use of standardized and alternative forms of assessment.

**EDUC 825-5 Second Language Acquisition and Schooling**

Academic factors that impact language learning, the universal grammar model of language, speech perception and production in first and second languages.

**EDUC 826-5 The Reading Process**

This course has a decidedly theoretical emphasis. Topics for study include: reading as a physiological process; psychological models of word processing; models for language and reading comprehension. The literature for this course will draw heavily upon current educational, psycholinguistic and psychological writings. Prerequisite: EDUC 473.

**EDUC 827-5 Individual Differences in Learning**

Students will examine current conceptions of individual differences that characterize the heterogeneity of students' abilities in school. Educational implications will also be addressed.

**EDUC 828-5 Instructional Practices in Reading**

The history of reading materials and methods will be discussed, and past and present instructional practices in reading evaluated in terms of state-of-the-art knowledge of instructional research; methods of analysing reading materials will be critiqued. Prerequisite: EDUC 826 or consent of the instructor.

**EDUC 829-5 Contemporary Issues in Learning Disabilities**

Selective issues important and current in the learning disabilities field are examined in depth. The objective is to enable students to master a significant body of knowledge in the learning disabilities field, and to identify areas of interest for their eventual thesis research. Prerequisite: EDUC 422.

**EDUC 830-5 Implementation of Educational Programs**

Problems and practices associated with innovation and implementation including the nature of change in the educational context, the roles of teachers, administrators, change agents, and evaluators.

**EDUC 832-5 Teaching Composition: Research and Practice**

This course leads students to understand, examine, and evaluate research and practice in the teaching of English composition, stressing a writing process and the integration of literature and language study.

**EDUC 833-5 Social and Moral Philosophy in Education**

An in-depth study of the ethical foundations of education. Areas in education where ethical questions arise are identified and elucidated. Classical and modern moral positions are examined for their adequacy as theories of moral justification. The topics include the value of education, freedom and equality, and moral and values education.

**EDUC 834-5 Multilingualism, Language Acquisition, and Language Learning in the School Context**

A critical examination of key aspects of bi- and multilingualism from the double perspectives of sociolinguistics and language education. Current issues and theoretical developments in the study of multilingualism, identity, and language teaching provide a solid foundation to understand second and third language acquisition and literacy development in bilingual settings, including new perspectives on plurilingualism in language planning in education. The language of instruction will be French.

**EDUC 837-5 Seminar in Education, Social Philosophy, and Sociological Theory**

An in-depth study of selected topics in education and social philosophy and sociological theory.

**EDUC 838-5 Judgment in Administrative Decision-making**

Students examine the exercise of judgment (discretion) as a key element in administrative decision-making, and investigate the various dimensions of the exercise of discretion: conceptual, empirical, normative and prescriptive using perspectives drawn from diverse administrative contexts.

**EDUC 839-5 History of Childhood and Education in the Western World**

This course will consist of a study of origins of 20th century concepts of childhood and their relationship to child-rearing and education in Europe and North America.

**EDUC 840-0 Graduate Seminar**

Graded on a satisfactory/unsatisfactory basis.

**EDUC 841-3 Graduate Seminar****EDUC 842-5 Sociocultural Perspectives on the Psychology of Development and Education**

Sociocultural criticisms of traditional views of psychological development and learning are examined, and alternatives advanced by an array of sociocultural theories and research pertaining to individual and collective development are explored with particular attention to their relevance for educational contexts, practices, and aims.

**EDUC 843-5 Embodiment and Curriculum Inquiry**

The scholarship on embodiment and its implications for the body as a site for knowledge and its relationship to contemporary curriculum inquiry will be studied with specific emphasis on the area of performative and narrative inquiry and arts education. Central to this course will be the investigation of embodiment from both a philosophical perspective and a literary/poetic perspective.

**EDUC 844-5 Research Basis of Mathematics Education**

An examination of critical issues, current research and research practices in mathematics education.

**EDUC 845-5 Learning Mathematics with Computers**

Experience in incorporating computers in mathematical problem solving, adaptation of materials for use in mathematics classroom.

**EDUC 846-5 Foundations of Mathematics Education**

An examination of historical, cultural, and psychological forces shaping the secondary school mathematics curriculum. Current developments in mathematics curriculum and in mathematics education research.

**EDUC 847-5 Teaching and Learning Mathematics**

The theory and practice of mathematics teaching at the secondary level. Emphasis on the nature of the learner and the function of the teacher.

**EDUC 848-5 Ideas and Issues in Aesthetic Education**

This course relates critical ideas in aesthetics to questions concerning the nature, purpose, and provision of the arts (visual art, music, drama, dance, literature) in education.

**EDUC 849-5 Artists, Society and Arts Education**

A major survey of the educational theories and practices of musicians and artists generally from medieval times to the present. The special focus will be on modern responses of musicians and artists to modern demands for mass arts education. Material will be drawn from Europe, North America, Asia, and other parts of the world where mass arts education provision occurs.

**EDUC 850-5 Creativity and Education**

This course involves an exploration of the concept of creativity used in educational theory and practice. Through an examination of philosophical writings, psychological studies, first hand accounts of creators, biographical and historical material, and works of art and science themselves, an attempt will be made to come to grips with some of the problems which surround this concept and thereby to evaluate views about creativity put forth in theoretical accounts and exhibited in educational practice.

**EDUC 851-5 Perspectives on Technology-supported Learning**

Examines applications of technology in teaching and learning emphasizing the progression of theory and research in this area from the early 20th century through the present to predictions about the future. Related fields of inquiry to be examined include: educational technology, artificial intelligence (AI), computer assisted instruction (CAI), computer-supported collaborative learning (CSCL), distance education, and socio-political perspectives on technology.

**EDUC 852-5 Education and Dramatic Art**

This course involves an exploration of basic issues and questions which underlie the nature and provision of drama education in the schools. It includes a critical examination of the claims made in the theoretical literature regarding the nature and aims of drama education and an exploration of the implications for drama education curriculum and pedagogy.

**EDUC 853-5 Tools, Theories and Practices of Computer Supported Collaborative Learning**

Computer-supported collaborative learning environments are designed with three principal objectives: to upgrade the conceptual quality of what is learned; to increase students' abilities to monitor, control and improve their own learning; and to provide improved support for social aspects of learning. In this course students will critically examine the theoretical underpinnings of the design of such learning environments, and examine and contribute to

developing practices in K-12 classrooms and other educational settings that make use of them.

#### **EDUC 854-5 Teachers as Agents of Change**

The narratives of teachers of minority and Anglo-European ancestry will provide insights into how teachers work within and beyond normative institutionally prescribed roles to define and implement positive social and educational changes for their students.

#### **EDUC 855-5 Multicultural and Race Relations Education: Policy Development and Program Implementation**

Theory, research, policy development and program implementation in multicultural and race relations education encompass a wide spectrum of areas of educational inquiry.

#### **EDUC 856-5 Sociocultural Perspectives on Education and Identity**

Course activities will be structured for participants to consider recent formulations of learners as agents as well as subjects of culturally constructed, socially imposed worlds. Participants will examine a number of ethnographic descriptions of the experiences of learners in a variety of communities, noting in particular their use of diverse mediations/tools, including language. Participants will consider these ideas in relation to their own educational communities and develop plans for research activity in those sites.

#### **EDUC 857-5 Issues and Topics in Environmental Education**

Examines the origins of environmental education, the range of program offerings, and the educational concepts which appear to underlie them. Prerequisite: consent of the instructor.

#### **EDUC 858-5 Contemporary Research and Classroom Practices in French Immersion**

Students examine studies, reports and articles relating to French Immersion methodology, curriculum and program exploration. Students derive classroom applications and curriculum changes from these studies. Prerequisite: EDUC 481.

#### **EDUC 859-5 Philosophy of Science and Perspectives on Education**

An introductory examination of various philosophical positions about the nature of science, including logical positivism, naive realism, instrumentalism, relativism and social constructionism, and their relation to curriculum and instruction in science.

#### **EDUC 860-3 Foundations of Educational Psychology**

An advanced survey of core topics in educational psychology. Prerequisite: An undergraduate course in educational psychology or a cognate field of psychology.

#### **EDUC 861-5 Study of Learning Environments**

This course reviews research on learning environments (also known as classroom climates or classroom ecologies) in terms of psychological and social perspectives on educational experience. Implications for student learning, professional development and evaluating education innovations are examined.

#### **EDUC 862-4 Individual Assessment in Counselling**

Assessment procedures used in educational and community counselling settings, including intake assessment, case conceptualization, observational procedures, diagnostic categories, ethics, bias and multicultural and diversity issues.

#### **EDUC 863-5 Quantitative Methods in Educational Research**

Focus on critical analysis of quantitative research in education. Research studies examined will be based on exploratory and confirmatory data analysis, including group comparisons and correlations.

Students will use calculators and computers for data analysis and display. Prerequisite: EDUC 864.

#### **EDUC 864-5 Research Designs in Education**

Designing and interpreting research about education. Introduction to survey techniques, correlational designs, classic experimental and evaluation designs for investigating causal relations, case study methods, interpretive approaches to research. Students with credit for EDUC 814 may not take this course for further credit.

#### **EDUC 866-5 Advanced Qualitative Research in Education**

Students will study in depth various qualitative methodological approaches to educational research, will develop competence to contribute significantly to knowledge in their particular field of study, and will engage in intensive practice of various methodological approaches to qualitative research introduced in EDUC 867. Prerequisite: EDUC 864 and 867.

#### **EDUC 867-5 Qualitative Methods in Educational Research**

This course introduces students to qualitative research in education and examines topics such as identifying problems, using conceptual frameworks, coding, data analysis, drawing interpretations, and constructing arguments. Prerequisite: EDUC 864 (prerequisite not required for students in M.Ed. in Educational Practice stream).

#### **EDUC 868-5 Curriculum Theory and Art Education**

The course examines and relates conceptions of creativity and response in the visual arts to the fundamental questions of curriculum theory.

#### **EDUC 869-5 Music Education as Thinking in Sound**

This course presents the theory and practice of music education based on theories of auditory perception, musical theory, and various cross-cultural perspectives on musical behavior.

#### **EDUC 870-4 Theories of Counselling**

Students examine analytic, phenomenological, existential, behavioral and cognitive approaches to counselling, and the philosophical and personality theories upon which they are based.

#### **EDUC 871-4 Family Counselling**

Students discuss models of family dynamics and instructional interventions applicable by school personnel in family counselling interactions. Concepts and techniques will be explicated through discussion and simulation. Prerequisite: EDUC 870.

#### **EDUC 872-3 Ethics in Counselling Psychology**

Issues related to foundational ethical principles and systems, professional and legal standards for counselling psychology, review of ethics codes, ethical decision-making, and other topics including professional boundaries, competence, service across cultures, social justice, consulting and private practice, and ethical guidelines around evaluation, assessment, supervision, and research.

#### **EDUC 873-4 Vocational Counselling**

Major theorists will be discussed to provide a theoretical basis for career counselling activities. Using an integrated framework and multi-modal approaches, techniques will be practiced to assist clients seeking vocational, job search, and occupational placement information.

#### **EDUC 874-5 Counselling Skills and Strategies**

Counselling skills and strategies are analysed, practiced, and critically examined. Counsellor decision-making, counselling effectiveness, and professionalism in counselling are also considered. Prerequisite: EDUC 870.

#### **EDUC 876-5 Cognitive Intervention Research**

Examines issues in research designed to enhance learners' cognitive processes. This research is subsumed under the broad term 'cognitive interventions,' which in turn, refers to research purported to increase learners' success in learning. The issues examined include the historical context, problems and prospects of cognitive interventions.

#### **EDUC 877-4 Contemporary School Counselling**

An examination of contemporary approaches to school counselling. Program development, consultation skills, counselling interventions in school counselling are considered.

#### **EDUC 878-5 Group Counselling**

An examination of contemporary approaches to group counselling. Prerequisite: EDUC 874.

#### **EDUC 879-5 Lev Vygotsky's Theories in Education**

Covers all major aspects of Lev Vygotsky's cultural-historical activity theory of human development and its contemporary applications in education. Concepts include the zone of proximal development of higher psychological functions, language and consciousness, interfunctional relations, analysis according to units, and "tool-and-result" methodology.

#### **EDUC 880-2.5 Master's Project (Completion)**

##### **EDUC 881-5 Project**

The project is a study that may take a variety of different forms including a survey, case study, extended essay, curriculum development project inter alia; central to its character is a concern with the application of relevant academic knowledge to professional practice. The project should normally be completed and approved in two terms.

#### **EDUC 883-5 MEd Comprehensive Examination**

The examination is graded on a satisfactory/unsatisfactory basis.

#### **EDUC 884-2.5 MEd Comprehensive Examination (Completion)**

Students who do not complete EDUC 883-5 in one term must enrol for this course in all subsequent terms.

#### **EDUC 890-4 Educational Media as Foundations of Curriculum**

Provides a historically-grounded treatment of the constructive role of technologies in the transmission and production of cultural knowledge and understanding. Students develop a grasp of the ways in which technologies have mediated and transformed the nature of knowledge, the knower, and processes of coming to know.

#### **EDUC 891-4 Learning Design in Technology-Mediated Environments**

Engages students in a critical analysis of learning design theory, including the underlying assumptions these embrace about knowledge, learning, the learner, learning technologies and the nature of instruction. Students will examine the appropriateness of media and learning technologies to support teaching and learning, and create a learning design according to a principled approach.

#### **EDUC 892-4 Cognitive Tools and Multimedia Learning**

Design principles for multimedia learning are derived from the theories and research of cognitive science. Topics include: tutorial interactions, history of adaptive learning systems, adapting to individual differences, dialogues with teachers (and other agents), problem solving and cognitive load, learning from multimedia, cognitive principles for document design, tools for self-regulated learning, intrinsic and situational motivation, simulations and self-regulated inquiry, inquiry with microworlds and cognitive tools, multimedia scenarios for anchored instruction.



### **EDUC 893-4 Organizational and Social Aspects of Learning Technology Design**

Reviews constructive approaches to integrating learning technologies, provides analysis tools from cultural historical activity theory, reviews impact of organizational culture and draws on visualization of social activity networks. Organization and change strategies are examined in higher, school and workplace learning; providing a source for designing organizational learning technologies.

### **EDUC 894-4 Methods for Research and Inquiry in Learning Technologies**

Examines methods, practices and thinking of direct value in improving quality and use of learning technologies. Students experience leading software tools for observational analysis, qualitative research and digital ethnography. We consider computer-supported methods for learning technology professionals and for assessing learning technology programs.

### **EDUC 897-5 Master's Thesis (Completion)**

### **EDUC 898-10 Master's Thesis**

The thesis is a research investigation designed to generate and/or examine critically new knowledge in the theory and/or practice of education. The thesis should normally be completed and approved in three terms.

### **EDUC 899-10 Doctoral Thesis**

Prerequisite: EDUC 983.

### **EDUC 901-5 Seminar in the History of Educational Theory**

The historical roots of educational thought are examined from a broad cultural perspective. Major works in disciplines such as philosophy, psychology and sociology which have had significant impact on educational theorizing will be studied. Special attention will be paid to the relationship between theory and educational practice.

### **EDUC 902-5 Interdisciplinary Seminar in Contemporary Educational Theory**

Contemporary educational theories and theories from supporting disciplines (e.g., psychology, sociology, philosophy) will be examined and analysed. The relationships among contemporary theories, current practice and educational change will be focal.

### **EDUC 903-5 Research Apprentices**

The apprenticeship is designed to provide the student with practical experience in scholarly inquiry in close co-operation with a faculty member in the student's area of specialization.

### **EDUC 904-5 Fieldwork III**

### **EDUC 905-5 Fieldwork IV**

### **EDUC 907-5 Selected Topics**

### **EDUC 908-5 Selected Topics**

### **EDUC 910-5 Directed Readings**

### **EDUC 911-5 Colloquium in Curriculum Theory (I)**

### **EDUC 912-5 Colloquium in Curriculum Theory (II)**

### **EDUC 921-5 Seminar in Philosophy and Educational Theory**

Philosophical examination of issues related to the school as an educational institution with social and political connections. Issues examined include: the education/training distinction; the justification of education; compulsory curriculum; freedom and authority in education; equality of educational opportunity; legal-moral questions central to educational administration; teachers'/parents'/students' rights and duties; accountability; and the logic of decision-making.

### **EDUC 922-5 Advanced Seminar in Epistemology and Education**

An in-depth study of epistemological issues in education, including: concepts of perception, cognition, imagination, memory, understanding,

learning and the assessment of learning. Other questions dealt with are: What are the various forms of knowledge? What are the implications for core curriculum? What epistemological assumptions underlie current educational practices? Is the relativity of knowledge thesis defensible? Are the claims of sociology of knowledge sound? What is meant by: objectivity/knowledge/belief/truth? In what sense can 'rationality' be defended as a central educational objective?

### **EDUC 923-4 The Politics of Difference: Coalition Building and Critical Pedagogy**

Students will become familiar with current theories, practices and research about anti-racist and critical pedagogies, and democratic dialogue for coalition-building in educational contexts.

### **EDUC 924-4 Multilingual Societies and Identities in a Globalizing World**

The course will introduce participants to theoretical perspectives and developments in the fields of multilingualism, identity formation and globalization, and to their impacts inside and outside of classrooms. Participants will be encouraged to employ, adapt, and challenge analytic paradigms, and to apply them to the contexts of the classrooms in which they teach and/or the societies in which they have lived.

### **EDUC 925-4 Critical Literacies in Multilingual Contexts**

Students will become familiar with current theory, practice and research in multiliteracies and multimodal literacies in multilingual contexts, in critical literacy pedagogies, and critical discourse analysis with respect to interaction as well as text. Participants will also discuss current critical literacy research practices, and demonstrate the design and execution of such studies.

### **EDUC 926-2 Doctoral Seminar A: Anthropological Approaches to Educational Research**

This seminar is designed for the first term of the doctoral program in Languages, Cultures, and Literacies in the Faculty of Education. It will provide students with opportunities to examine and practice analytical research procedures that are currently in the forefront of socio-cultural, transformative educational scholarship. Students will become familiar with and discuss anthropological approaches in education research.

### **EDUC 927-2 Doctoral Seminar B: Sociolinguistic Approaches to Educational Research**

Participants will discuss methodological approaches in sociolinguistic research in educational and other social contexts. Courses instructors will introduce a range of sociolinguistic research following different methodologies, as well as presenting their own research. Participants will be involved in discussions and analysis in three areas: analysis of data from instructors' research; applicability of methodologies in participants' own social and educational contexts; relevance and applicability of methodologies in terms of participants' emerging research plans.

### **EDUC 928-2 Doctoral Seminar C: Critical and Sociocultural Approaches to Educational Research**

Participants will discuss examples of critical and sociocultural research in multiliteracies and multimodal literacies in multilingual contexts. Course instructors will present their own as well as others' research, and course discussion will centre on methods and techniques for this approach to critical educational research. Participants will be involved in analyzing data from instructors' projects.

### **EDUC 930-4 Considering the Future of Learning Communities**

Considers what it means to build and have membership in a learning community, and how the use of computing and telecommunications technologies may contribute to these goals. Students will critically examine reports from a variety of traditions (including anthropology, sociology, cognitive science) about how traditional and "wired" learning communities function. Each student will apply insights from the class readings and activities to produce a design proposal for a future learning community.

### **EDUC 931-4 Group and Organizational Learning Technologies**

An advanced class engaging candidates in research toward social and organizational factors and designs. Projects are determined through student study plans and faculty research.

### **EDUC 932-4 Learner-Centred Design**

Examines a new paradigm for designing learning environments that integrates research on the experience of learning complex material with the rigor of systematic design processes. Students will design and carry out a learner-centred study and will be expected to contribute to the development of this new design paradigm in class discussions and in reflective writing.

### **EDUC 941-5 Mathematical Learning and Thinking: Historical, Philosophical, and Psychological Dimensions**

Focuses on motivations and rationales guiding seminal thinkers in the historical development of mathematical thinking, mathematical cognition and learning, with an eye toward foundational issues in contemporary educational research, theory and practice.

### **EDUC 942-5 Contemporary Theories and Methodologies in Mathematics Education**

Contemporary theories and methodologies in mathematics education will be examined and analysed. Developing an overview of mathematics education as an evolving research domain will be focal.

### **EDUC 945-5 Doctoral Seminar in Arts Education**

The course provides a broad theoretical overview of problems and ideas associated with the nature and provision of arts education in the schools.

### **EDUC 946-5 Doctoral Seminar in Mathematics Education**

This seminar is designed to extend and deepen students' understanding of the discipline of mathematics education. It will examine international developments, research programs, special interest groups, recent theories in learning and teaching mathematics, and issues in mathematics teacher education. Prerequisite: EDUC 942.

### **EDUC 950-5 Approaches to Educational Research**

The broad paradigms encompassing much current educational research are examined, with emphasis on their philosophical and assumptional bases, as well as general ethical and methodological issues. Particular attention is paid to the critical reading of research and the implications for educational leadership. In addition, students begin to identify a research topic and to develop a defensible research orientation.

### **EDUC 960-5 Ethics, Law and Professional Leadership**

This seminar examines the ethical and legal environment of professional leadership. Specifically, the course addresses moral issues and dilemmas embedded in professional practice including occupational and ordinary morality, issues of deception and honesty, informed consent, privacy

and confidentiality, conflict of interest, individual and collective responsibility, inter alia. The course will use cases and personal experience as heuristics for learning.

### **EDUC 961-5 Educational Governance, Reform and Diversity**

The nature and impact of recent wide-ranging systemic educational reform in several different countries are critically examined, through two major themes. One theme is the politics and dynamics of governance, with a particular emphasis on participatory forms of political life in a heterogeneous society. The other theme is the politics and culture of difference, and the development of community which respects these differences.

### **EDUC 962-5 Leadership, Accountability and the Public Interest**

The special responsibilities of leaders in educational institutions for accountability both to learners and to the wider community with respect to policies, practices and programs are the focus of this seminar. Contemporary approaches to program assessment and to ensuring cost-effectiveness in educational management are applied to cases emerging from student experience.

### **EDUC 963-5 Approaches to Problematising**

This course examines how problems in practice are identified, defined and understood from a variety of different theoretical perspectives. Within the common framework of the course, students will investigate a problem or issue of significance to their individual workplaces or to their individual research endeavors.

### **EDUC 964-5 Seminar in Educational Theory EDUC 970-4 Systems and Paradigms in Educational Psychology**

A survey of major 20th century systems and paradigms that underlie research and theories in instructional psychology; addresses learning, cognition, motivation, methods of inquiry, and other cornerstones of the field. Prerequisite: one of EDUC 826, 829, 860, 870 or equivalent graduate course.

### **EDUC 971-4 Advanced Topics in Educational Psychology**

In-depth critical analysis of select topics in educational psychology. Prerequisite: EDUC 860. Students who have taken EDUC 865 in previous terms may not take this course for further credit.

### **EDUC 972-4 Colloquium in Psychology of Education**

Survey of methods for synthesizing knowledge gleaned from primary and secondary research, including meta-analysis and integrative reviewing. Assignments culminate in presenting a colloquium about a topic of the student's choice to the faculty.

### **EDUC 975-4 Advanced Quantitative Methods in Educational Research**

Methods for analyzing multivariate data in educational research, meta-analytic methods, and applications and frailties of advanced quantitative analysis. Illustrations from educational research are used throughout. Prerequisite: EDUC 863 and 864 or permission of instructor.

### **EDUC 983-5 Doctoral Comprehensive Examination**

The examination is graded on a satisfactory/unsatisfactory basis.

## **Education Professional EDPR Faculty of Education**

### **EDPR 393-394 Special Topics**

This field based course will explore issues of concern to experienced practising educators. Course may be offered on a pass/withdrawal basis. Variable units 2, 3, 4, 5, 6. Prerequisite: EDUC 405 or special permission of the instructor.

### **EDPR 410-413 Field Based Studies in Curriculum Development**

This course is intended for practising teachers, school administrators or other practising educators who are involved in curriculum development. The course provides opportunities for members of the teaching profession to work on curriculum development projects under the supervision of faculty members and/or distinguished practitioners designated by the faculty. Those wishing to undertake a field based studies course must submit a proposal form, available from the Office of Field Programs, before the end of the term prior to the one in which the student intends to commence the study. The proposal must be approved by the director of field programs prior to enrolment in the course. Field based studies courses may have a unit value of 2, 3, 4 or 5 depending upon the nature of the proposed project. Evaluation is based on a pass-withdraw system. Field based studies in curriculum development may not form a component of EDUC 404. The course may form a component of an approved program of studies for the post baccalaureate diploma. Prerequisite: teaching certificate or permission of the director of field programs.

### **EDPR 414-417 Field Based Studies in Educational Practice**

This course is intended for practising teachers who wish to upgrade their professional work in a specific area of instruction or educational service. The field work is completed by individuals or groups of teachers under the supervision of a faculty member or field studies supervisor designated by the faculty. Those wishing to undertake a field based studies course must submit a proposal form, available from the Office of Field Programs, before the end of the term prior to the one in which the student intends to commence the study. The proposal must be approved by the director of field programs prior to enrolment in the course. Field based studies courses may have a unit value of 2, 3, 4 or 5 depending upon the nature of the project proposal. Evaluation is based on a pass/withdraw system. Field based studies in educational practice may not form a component of EDUC 404. The course may form a component of an approved program of studies for the post baccalaureate diploma. Prerequisites: teaching certificate or permission of the director of field programs.

### **EDPR 418-421 Group Field Studies in Selected Professional Topics**

This course is intended for small groups of practising educators who wish to investigate a specific topic in education through focused inquiry. Seminars, readings and related field work are directed by a faculty member or field studies supervisor designated by the Faculty of Education. The designated supervisor, on behalf of the group, must submit a proposal form, available from the Office of Field Programs, before the end of the term prior to the one in which the students intend to commence the study. The proposal must be approved by the director of field programs prior to enrolment in the course. Field studies courses may have a unit value of 2, 3, 4 or 5, depending upon the nature of the project proposal. Evaluation is based on a pass/withdraw system. Group field studies in selected professional topics may not form a component of EDUC 404. The course may form a component of an approved program of studies for the post baccalaureate diploma. Prerequisite: teaching certificate or permission of the director of field programs.

### **EDPR 492-499 Special Topics**

This field based course will explore issues of concern to experienced practising educators. Course may be offered on a pass/withdrawal basis. Variable units: 2, 3, 4, 5, 6. Prerequisite: EDUC 405 or special permission of the instructor.

### **EDPR 501-520 Special Topics**

This course requires students to investigate current theory, research and pedagogy related to a particular theory. Graded on a satisfactory/unsatisfactory basis. Variable units 2, 3, 4, 5.

### **EDPR 521-540 Special Topics**

This course involves students in critical examination of policy, curricular, instructional and assessment practices related to a particular theme. Graded on a satisfactory/unsatisfactory basis. Variable units 2, 3, 4, 5.

### **EDPR 541-550 Advanced Field Studies in Curriculum Development I**

In this course, students read for, plan and develop a conceptual framework for action that connects theme studies to the individual's professional context. Graded on a satisfactory/unsatisfactory basis. Variable units 2, 3, 4, 5.

### **EDPR 551-560 Advanced Field Studies in Curriculum Development II**

In this course, students read for, plan and develop a conceptual framework for action that connects theme studies to the individual's professional context. Graded on a satisfactory/unsatisfactory basis. Variable units 2, 3, 4, 5.

### **EDPR 561-570 Advanced Field Studies in Educational Practice I**

In these courses, students implement plans for action, conduct classroom inquiry, and document their individual learning related to the theme of the course sequence. Graded on a satisfactory/unsatisfactory basis. Variable units 2, 3, 4, 5.

### **EDPR 571-580 Advanced Field Studies in Educational Practice II**

In this course, students implement plans for action, conduct classroom inquiry, and document their individual learning related to the theme of the course sequence. Graded on a satisfactory/unsatisfactory basis. Variable units 2, 3, 4, 5.

### **EDPR 581-590 Advanced Field Studies in Collaborative Inquiry I**

In this course, students work in groups to investigate topics of mutual interest within the diploma theme, with an emphasis on their contributions to both the cohort learning group and the individual's broader educational community. Graded on a satisfactory/unsatisfactory basis. Variable units 2, 3, 4, 5.

### **EDPR 591-599 Advanced Field Studies in Collaborative Inquiry II**

In this course, students work in groups to investigate topics of mutual interest within the diploma theme, with an emphasis on their contributions to both the cohort learning group and the individual's broader educational community. Graded on a satisfactory/unsatisfactory basis. Variable units 2, 3, 4, 5.

## **Educational Technology and Learning ETEC Faculty of Applied Sciences**

### **ETEC 600-1 Learning with Asynchronous Communication**

This course will introduce graduate students to teaching and learning with asynchronous, computer-mediated conferences. It will survey related learning theory, research on effectiveness, design of learning activities, facilitation, assessment, and features of conferencing systems.

### **ETEC 601-1 Problem Based Learning**

This course will introduce graduate students to teaching and learning with problem-based learning (PBL). Delivered using PBL, the course includes related learning theory, research on effectiveness,

design of learning activities, assessment, facilitation, and computer-mediated delivery.

**ETEC 691-693-1 Directed Studies**  
**ETEC 694-699-3 Directed Studies**

## Engineering Science ENSC Faculty of Applied Sciences

### ENSC 100-3 Engineering Technology and Society

This course is designed to provide an introduction to the practice of engineering, surveying its history and its current state. The social and political aspects of engineering decisions will be illustrated by a number of case studies. Corequisite: ENSC 101. Breadth-Science.

### ENSC 100W-3 Engineering Technology and Society

This course is designed to provide an introduction to the practice of engineering, surveying its history and its current state. The social and political aspects of engineering decisions will be illustrated by a number of case studies. Corequisite: ENSC 101. Writing/Breadth-Science.

### ENSC 101-1 Writing Process, Persuasion and Presentations

This course provides a general introduction to the principles of effective communication with special emphasis on the writing process, persuasive writing, research papers, and oral presentations. In conjunction with ENSC 100-3, the course also explores current social and ethical issues in engineering. Corequisite: ENSC 100.

### ENSC 101W-1 Writing Process, Persuasion and Presentations

This course provides a general introduction to the principles of effective communication with special emphasis on the writing process, persuasive writing, research papers, and oral presentations. In conjunction with ENSC 100-3, the course also explores current social and ethical issues in engineering. Corequisite: ENSC 100. Writing.

### ENSC 102-1 Form and Style in Professional Genres

The major focus of this course is on the style and format of technical writing with attention to laboratory reports and project documentation. This course also examines resumes, cover letters, interview skills and formal reports to help students prepare for their first internship term. Corequisite: PHYS 131.

### ENSC 150-3 Introduction to Computer Design

Digital design concepts are presented in such a way that students will learn how basic logic blocks of a simple computer are designed. Topics covered include: system of binary numbers, Boolean Algebra, combinational logic design, sequential logic design, and basic Von Neumann computer architecture. Students with credit for CMPT 150 or 290 cannot take this course for further credit. CMPT 150 can be substituted for this course. Quantitative.

### ENSC 182-3 Mechatronics Design I

First year project course designed to provide students with a first exposure to the challenges of project organization. Students are responsible for designing and constructing a mechanical robot optimized to solve a particular chosen task. The engineering challenges of the project are expected to focus half on mechanical design and half on control algorithm design and implementation.

### ENSC 194-3 Optional Job Practicum

Four month internship of a non-technical nature. May be taken at any point during the program but will not count toward one of the three mandatory co-op work terms. Credit is awarded as in ENSC 195. Units from this course do not count towards the units required for an SFU degree.

### ENSC 195-3 Industrial Internship I

First four month internship in industry. Credit is given as pass/withdraw/fail (P/W/F) only, based on the employer's and co-operative education co-ordinator's evaluations. Units from this course do not count towards the units required for an SFU degree.

### ENSC 196-3 Special Internship I

Four month internship in industry or university research environment. Credit is awarded as in ENSC 195. Prior approval of Internship Co-ordinator required. Units from this course do not count towards the units required for an SFU degree.

### ENSC 201-3 The Business of Engineering

This course covers the business, management and entrepreneurial concepts that are important to engineers who manage projects, run businesses, or need to decide on the most efficient method for accomplishing a task. The topics to be covered include: financial accounting, rates of return, taxes, cost-benefit analyses, marketing, financing methods, and business plans. Prerequisite: 45 units

### ENSC 204-1 Graphical Communication for Engineering

An introduction to the use of graphical communication in engineering. Objectives are to improve the students' literacy in the use of graphics to communicate engineering information, and their ability to visualize and to think in three dimensions. Specific application areas discussed include 2D and 3D geometry in mechanical drawing, electronics-related drawings, block diagrams, and flow charts. The use of CAD tools will be discussed, and demonstrations of some tools will be provided.

### ENSC 215-3 Microcontroller Interfacing and Assembly-Language Programming

A common microcontroller will be presented such that students will be able to create a small project by interfacing with a variety of devices using assembly language. Topics include: the central processing unit (CPU) and memory, how the CPU executes machine code in the memory, how the programming task is simplified by the use of an assembler, the operation of the stack, writing subroutines, interfacing with input/output devices, and handling interrupts. Coding, testing, debugging, and other laboratory techniques will be introduced as needed. Prerequisite: ENSC 150 and CMPT 128. CMPT 128 can be taken concurrently. Students who have taken ENSC 151 cannot take this course for further credit.

### ENSC 220-3 Electric Circuits I

This course will cover the following topics: fundamental electrical circuit quantities, and circuit elements; circuits laws such as Ohm law, Kirchoff's voltage and current laws, along with series and parallel circuits; operational amplifiers; network theorems; nodal and mesh methods; analysis of natural and step response of first (RC and RL), as well as second order (RLC) circuits; real, reactive and rms power concepts. In addition, the course will discuss the worker safety implications of both electricity and common laboratory practices such as soldering. Prerequisite: PHYS 121 and 131, or PHYS 126 and 131, or PHYS 141, and MATH 232 and 310. MATH 232 and/or 310 may be taken concurrently. Students with credit for ENSC 125 cannot take this course for further credit. Quantitative.

### ENSC 224-3 Electronic Devices

The essential physics of silicon semiconductor devices that form the heart of integrated circuits today. An introduction to semiconductor device physics upon which device models are based leading to the development of the drift-diffusion equations. The static and dynamic behavior of PN junction diodes, bipolar junction transistors, and field effect transistors will be covered along with the application of the developed device models to integrated circuit design. Prerequisite: ENSC 220 or equivalent.

Students who have taken PHYS 365 cannot take this course for further credit.

### ENSC 225-4 Microelectronics I

This course teaches analog/digital electronics and basic device physics in the context of modern silicon integrated circuits technology. Topics include: qualitative device physics and terminal characteristics; implementations and models of basic semiconductor devices (diodes, BJTs and MOSFETs); circuit simulation via SPICE; basic diode circuits; transistors as amplifiers and switching elements; temperature effects and compensation; single-stage transistor amplifiers; biasing, current sources and mirrors. Prerequisite: ENSC 150 or CMPT 150, and ENSC 220. Quantitative.

### ENSC 226-4 Electronic Circuits

Introduces the basic electronic components, amplifiers, diodes, and oscillators. Fundamentals of logic design. Prerequisite: ENSC 220. Students who have taken this course may not take ENSC 225 for further credit.

### ENSC 230-4 Introduction to Mechanical Design

This course presents the elements and principles involved in design and analysis of basic mechanical structures and mechanisms. Mechanical elements such as gears, cams and bearings and fundamental relationships between the forces and corresponding motion or deflection are investigated through examples and experiments. This background can then be used in the design, analysis and development of computer controlled machines such as robotic devices. Prerequisite: PHYS 120, MATH 310.

### ENSC 231-3 Engineering Materials

Materials, their structures, properties and performance; crystal structures and instruments for structure determination; polymers, ceramics, and composites; quality control and reliability. Prerequisite: CHEM 120 or 121; PHYS 140 or 121. Students who have taken ENSC 330 may not take this course for further credit.

### ENSC 250-3 Introduction to Computer Architecture

This course deals with the main concepts embodied in computer hardware architecture. In particular, the organization, design and limitations of the major building blocks in modern computers is covered in detail. Topics will include: processor organization; control logic design; memory systems; and architectural support for operating systems and programming languages. A hardware description language will be used as a tool to express and work with design concepts. Prerequisite: CMPT 150 or ENSC 150. This course is identical to CMPT 250 and students cannot take both courses for credit. Quantitative.

### ENSC 263-3 Special Topics in Engineering Science

Prerequisite: permission of the undergraduate curriculum chair.

### ENSC 264-4 Special Topics in Engineering Science

Prerequisite: permission of the undergraduate curriculum chair.

### ENSC 281-3 Statics and Strength of Materials

Covers basic concepts of mechanics, vectors. Statics of particles. Rigid bodies and force systems, equilibrium of rigid bodies. Analysis of trusses and frames. Distributed forces, centroids and moments of inertia. Friction. Internal shear and bending moments in beams. Strength of material: introduction to mechanical response of materials and stress-strain transformations. Virtual work and energy methods. Prerequisite: PHYS 140, MATH 152.

**ENSC 282-3 Kinematics and Dynamics of Rigid Bodies and Mechanisms**

Planar and 3D motions kinematics and kinetics of rigid bodies and mechanisms; linkages, gears, cams; synthesis and analysis of mechanisms; consideration of the static and dynamic forces in machines; vibration analysis, response to shock, motion and force transmissibility, vibration isolation. Prerequisite: PHYS 140, MATH 152, and 310.

**ENSC 283-3 Introduction to Fluid Mechanics**

Physical properties of fluids and fundamental concepts in fluid mechanics. Hydrostatics. Conservation laws for mass, momentum and energy. Flow similarity and dimensional analysis as applied to engineering problems in fluid mechanics. Laminar and turbulent flow. Engineering applications such as flow measurement, flow in pipes and fluid forces on moving bodies. Prerequisite: PHYS 141, MATH 152, and 310.

**ENSC 295-3 Industrial Internship II**

Second four month internship in industry. Credit is awarded as in ENSC 195. Units from this course do not count towards the units required for an SFU degree. Prerequisite: ENSC 195 or 196.

**ENSC 296-3 Special Internship II**

Four month internship in industry or university research environment. Credit is awarded as in ENSC 195. Units from this course do not count towards the units required for an SFU degree. Prerequisite: ENSC 195 or 196 and approval of internship co-ordinator required.

**ENSC 303-3 Directed Studies in Engineering Science**

Directed reading and research in a topic chosen in consultation with a supervisor. Admission requires agreement by a proposed faculty supervisor and submission of a proposal to the school at least one month prior to the start of the term in which the course will be taken. Upon completion of a directed study course, the student must submit a copy of the 'deliverables' to the chair of the undergraduate curriculum committee. Prerequisite: a minimum of 70 units and permission of the chair of the undergraduate curriculum committee.

**ENSC 304-1 Human Factors and Usability Engineering**

The user is often overlooked in the engineer's quest for a functional and efficient design. This course examines the factors that make designs more or less usable and how to integrate usability constraints and testing procedures into the design process.

**ENSC 305-1 Project Documentation and Team Dynamics**

This course is integrated with an ENSC project course (either ENSC 340 or 440) that provides practical experience with the design process for development projects. Topics include project management, team writing, project documentation (proposals, functional and design specifications, progress reports, and users manuals), group dynamics and dispute resolution. Corequisite: ENSC 440 or 441.

**ENSC 305W-1 Project Documentation and Group Dynamics**

This course is integrated with an ENSC project course (either ENSC 340 or 440) that provides practical experience with the design process for development projects. Topics include project management, team writing, project documentation (proposals, functional and design specifications, progress reports, and users manuals), group dynamics and dispute resolution. Corequisite: ENSC 440 or 441. Writing.

**ENSC 311-3 The Business of Engineering I**

Provides fundamentals of the business, management and entrepreneurial concepts important to Canadian

engineers who manage projects, run businesses, or need to decide on the most efficient method for accomplishing a task. Topics include the Canadian business environment, theories of management thought, forms of ownership, corporate structure and growth, the process of management — planning, organization theory, motivation, control and communication. Additional topics include financial accounting, rates of return, taxes, cost-benefit analysis, marketing, financing methods, and business plan. Prerequisite: students must have completed a minimum of 75 units. Students who have taken this course may not take ENSC 201 for further credit.

**ENSC 312-3 The Business of Engineering II**

Offered in conjunction with ENSC 384 Mechatronics Design II. Concepts covered include project management skills such as budgeting, scheduling earned value analysis as well as facilitation, communication and negotiation. Students will experience what it is like to be part of a diverse project team while working on a specific project. The business topics covered in ENSC 311 are reinforced in this course. These topics include financial accounting, rates of return, taxes, cost-benefit analysis, marketing, financing methods, and business plan. Prerequisite: ENSC 311. Corequisite: ENSC 384.

**ENSC 320-3 Electric Circuits II**

This course is a second course on electric circuits and the topics covered include: the use of Laplace transform in circuit analysis, including poles and zeros, the frequency response and impulse response; convolution as a method for computing circuit responses; resonant and bandpass circuits; magnetically coupled circuits; three-phase circuits; two port circuits; and filtering. Prerequisite: ENSC 220.

**ENSC 325-4 Microelectronics II**

This course introduces Students to analog integrated circuit design in the context of modern silicon integrated circuits technology. Topics included: integrated circuit technology and design tools; integrated component characteristics and limitations, differential amplifiers; multi stage amplifiers; feedback amplifiers; stability and frequency compensation; integrated operational amplifiers; bipolar and MOS digital circuits; analog aspects of digital electronics. Prerequisite: ENSC 225.

**ENSC 327-4 Communication Systems**

This course represents and introduction to analog and digital communications systems. The main topics are: a review of Fourier Transform; the representation of bandpass signals; random signals in communications, including stationarity, ergodicity, correlation, power spectra and noise; amplitude and frequency modulation; circuits and techniques for modulation and demodulation; frequency division multiplexing; baseband digital communication; time division and multiplexing; an introduction to basic digital modulation schemes such as BPSK, FSK and QPSK. Laboratory work is included in this course. Prerequisite: ENSC 380 and STAT 270.

**ENSC 328-1 Random Processes in Engineering**

An introduction to continuous-valued random processes, including first and second order statistics. Topics: definitions of random processes taking complex values in continuous time; autocorrelation and autocovariance functions in the time domain; stationarity, ergodicity; power spectral density in frequency domain; effect of linear filters; cross correlation functions and cross-power spectral densities. Prerequisite: ENSC 380 and STAT 270. STAT 270 may be taken concurrently. Students who have taken ENSC 327 may not take ENSC 328 for further credit.

**ENSC 329-4 Introduction to Digital Logic**

Conveys the essential principles of digital logic systems which are the building blocks of many electronic systems including computer systems. These principles form the basis of the electronics component of the mechatronics curriculum and therefore a good understanding of the material is crucial. Prerequisite: ENSC 226, CMPT 128.

**ENSC 330-4 Engineering Materials**

An introductory course in materials science which covers materials — their structures, properties, and performance; crystal structures and instruments for structure determination; polymers, ceramics, composites; quality control and reliability. Prerequisite: CHEM 121, PHYS 121.

**ENSC 331-3 Introduction to Microelectromechanical Systems**

An introduction to microelectromechanical systems, covering thin film processing technologies, bulk and surface micromachining, and MEMS applications. Prerequisite: ENSC 282, 283, 226.

**ENSC 332-4 Microprocessors and Interfacing**

Covers basic microcomputer architecture, design and analysis of address decoders and memory systems, design and analysis of assembly language programs and microcomputer system design. Prerequisite: ENSC 329.

**ENSC 350-3 Digital Systems Design**

This course deals with advanced topics in digital design such as advanced state machine concepts, asynchronous design, hardware description languages, bus interfacing and DSP architecture. It also covers both the architecture and programming of field programmable logic devices. Some laboratory work is expected. Prerequisite: ENSC 215, and either ENSC 250 or CMPT 250.

**ENSC 351-4 Real Time and Embedded Systems**

This course concentrates on the problems encountered when attempting to use computers in real time (RT) and embedded applications where the computer system must discern the state of the real world and react to it within stringent response time constraints. Both design methodology and practical implementation techniques for RT systems are presented. Although some hardware will be involved, it should be noted that this course concentrates on real time software. Prerequisite: CMPT 128, and either CMPT 250 or ENSC 250, and a minimum of 60 units. ENSC 215 is highly recommended. Students who have taken ENSC 451 cannot take this course for further credit.

**ENSC 363-3 Special Topics in Engineering Science**

Prerequisite: permission of the undergraduate curriculum chair.

**ENSC 364-4 Special Topics in Engineering Science**

Prerequisite: permission of the undergraduate curriculum chair.

**ENSC 370-3 Biomedical Engineering Directions**

An overview of the discipline of biomedical engineering, including its purpose and scope. Typical discussion topics: goals and limitations of biomedical engineering, the nature and relevant technologies of selected application areas, common aspects of biomedical practice, current trends and new directions in biomedical engineering. Students conduct extended investigations of biomedical practice, new biomedical techniques or possible new products, then prepare reports and present seminars. Prerequisite: completion of at least 25 units of engineering science (ENSC) courses and KIN 208. KIN 208 can be taken concurrently.

**ENSC 372-4 Biomedical Instrumentation**

Instrumentation techniques for measuring common physiological signals. Bioelectric and biochemical sensors. Biostimulation. Electronic design issues: electrical safety, signal conditioning and protection against noise, digital signal acquisition. Live subject ethical considerations. Laboratory work to include use of data acquisition packages in conjunction with various sensors, as well as design and construction of a full signal acquisition chain, from sensor to RAM. Prerequisite: ENSC 225, 320, 380 and KIN 308. KIN 308 can be taken concurrently.

**ENSC 374-4 Biomedical Image Acquisition**

Provides an understanding of the scientific principles, physics and engineering technology that provide the basis for the various techniques (radiography, sonography, computed tomography, magnetic resonance imaging), by which medical images are acquired. Prerequisite: ENSC 220, 225. Recommended: ENSC 224.

**ENSC 376-4 Introduction to Optical Engineering and Design**

In this course students learn basic of designing optical instruments. Lectures cover the principles of operation of optical devices using linear (ray) optics and Fourier optics as well as optical metrology. Hands-on practice is provided by extensive laboratory activities. Prerequisite: PHYS 121, MATH 254.

**ENSC 380-3 Linear Systems**

The objectives of this course are to cover the modelling and analysis of continuous and discrete signals using linear techniques. Topics covered include: a review of Laplace transforms; methods for the basic modelling of physical systems; discrete and continuous convolution; impulse and step response; transfer functions and filtering; the continuous Fourier transform and its relationship to the Laplace transform; frequency response and Bode plots; sampling; the Z-transform. Prerequisite: ENSC 220 and MATH 310.

**ENSC 381-3 Systems Modeling and Simulation**

Introduction to systems modeling and analysis. Application to engineering systems including: mechanical, electrical, thermal, and fluid systems. Allows the student to acquire, in a time-efficient and uncomplicated manner, knowledge in the formation and construction of dynamic models. The simulation models that the student will design in this course accommodate these analyses, with the construction of realistic hypotheses and elaborate behavior models. Prerequisite: ENSC 226, 281, 282, 283, MATH 251. Corequisite: PHYS 344.

**ENSC 382-3 Machine Design**

Review of stress and strain in solids, superposition, energy theorems, theories of failure, elastic and inelastic analysis of symmetrical bending, torsion of circular members, and virtual work. Adequacy assessment and synthesis of machine elements with a focus on the design process. Static failure of ductile and brittle materials, fatigue analysis of structures. Topics include the design of welds, bolted connections, springs and shafts. Solution strategies include both analytical and finite element methods. Prerequisite, ENSC 281 and 282.

**ENSC 383-4 Feedback Control Systems**

This course is an introduction to the analysis, design, and applications of continuous time linear control systems. Topics include transfer function representation of open and closed loop systems, time domain specifications and steady state error, sensitivity analysis, time and frequency response, and stability criteria. It includes a treatment of methods for the analysis of control systems based on the root locus, Bode plots and Nyquist criterion, and their use in the design of PID, and lead-lag compensation. Lab work is included in this course. Prerequisite: ENSC 380.

**ENSC 384-4 Mechatronics Design II**

Interweaves mechanisms, electronics, sensors, and control strategies with software and information technology to examine the demands and ideas of customers and find the most efficient, cost-effective method to transform their goals into successful commercial products. Most of the term is devoted to a significant design project in which student groups work independently and competitively, applying the design process to a project goal set by the faculty co-ordinator. Prerequisite: ENSC 382, 381, and 182. ENSC 312, 332 and 387 can either be taken as prerequisites or concurrently.

**ENSC 387-4 Introduction to****Electro-Mechanical Sensors and Actuators**

This course provides an introduction to sensors and actuators for electromechanical, computer-controlled machines and devices. Topics include operating principles, design considerations, and applications of analog sensors, digital transducers, stepper motors, continuous-drive actuators, and drive system electronics. Component integration and design considerations are studied through examples selected from applications of machine tools, mechatronics, precision machines, robotics, aerospace systems, and ground and underwater vehicles. Laboratory exercises strengthen the understanding of component performance, system design and integration. Prerequisite: ENSC 380.

**ENSC 388-3 Engineering Thermodynamics and Heat Transfer**

Energy transfer as work and heat, the First Law of thermodynamics. Properties and states of simple substances. Control-mass and control-volume analyses. Entropy, the Second Law of thermodynamics. Carnot cycle. Energy conversion systems; internal combustion engines, power plants and refrigeration cycles. Heat transfer by conduction, convection, and radiation. Formulation and solution of steady and transient problems. Cooling of microelectronics, thermal solutions. Prerequisite: MATH 152, 251, PHYS 141. Students with credit for PHYS 344 cannot take this course for further credit.

**ENSC 395-3 Industrial Internship III**

Third four month internship in industry. Credit is awarded as in ENSC 195. Units from this course do not count towards the units required for an SFU degree. Prerequisite: ENSC 295 or 296 and a minimum of 75 units.

**ENSC 396-3 Special Internship III**

Four month internship in industry or university research environment. Approved entrepreneurial projects will also be accepted. Credit is awarded as in ENSC 195. Units from this course do not count towards the units required for an SFU degree. Prerequisite: ENSC 295 or 296, a minimum of 75 units and approval of internship co-ordinator required.

**ENSC 400-402-4 Directed Studies in Engineering Science**

Directed reading and research in a topic chosen in consultation with a supervisor. Admission requires agreement by a proposed faculty supervisor and submission of a proposal to the school at least one month prior to the start of the term in which the course will be taken. Upon completion of a directed study course, the student must submit a copy of the 'deliverables' to the chair of the undergraduate curriculum committee. Prerequisite: a minimum of 100 units and permission of the chair of the undergraduate curriculum committee.

**ENSC 403-3 Directed Studies in Engineering Science**

Directed reading and research in a topic chosen in consultation with a supervisor. Admission requires agreement by a proposed faculty supervisor and submission of a proposal to the school at least one month prior to the start of the term in which the course

will be taken. Upon completion of a directed study course, the student must submit a copy of the 'deliverables' to the chair of the undergraduate curriculum committee. Prerequisite: a minimum of 100 units and permission of the chair of the undergraduate curriculum committee.

**ENSC 406-2 Engineering Ethics, Law, and Professional Practice**

This course provides an introduction to the engineering profession, professional practice, engineering law and ethics, including the issues of worker and public safety. It also offers opportunities to explore the social implications and environmental impacts of technologies, including sustainability, and to consider engineers' responsibility to society. Prerequisite: 100 units or permission of the instructor.

**ENSC 424-4 Multimedia Communications Engineering**

This course covers the technical basis for multimedia communications systems. The main topics are as follows: methods for audio and visual signal compression and processing; the communications requirements of multimedia systems, such as synchronization, quality of service and bandwidth; the architectures and protocols associated with multimedia communications networks. Prerequisite: ENSC 380.

**ENSC 425-4 Electronic System Design**

The principles and processes involved in designing analog circuits, emphasizing the functional blocks that comprise subsystems of a larger analog signal processing system. Topics include linear and nonlinear amplifiers, active filters, signal generators, signal modulators, switchmode power converters and analog/digital data conversion. The effects of non-ideal aspects of IC operational amplifiers on system performance are discussed and verified using laboratory projects. Students should be familiar with the behaviour and application of discrete semiconductor devices. Prerequisite: ENSC 320, 325 and 380.

**ENSC 426-4 High Frequency Electronics**

Transmission lines and waveguides, microwave devices, travelling wave devices. An introduction to the theory of radiation, antennae and wave propagation, and microwave scattering theory. The design of complete communication systems incorporating microwave, optical and satellite channels. Laboratory work is included in this course. Prerequisite: PHYS 221 or 321.

**ENSC 427-4 Communication Networks**

Quantitative performance analysis and design of data and integrated services networks. Re-transmission error recovery schemes, networks of queues, congestion control, routing strategies. Multiple access techniques in data networks, design for specified throughput and delay performance. Wireless networks, routing approaches in mobile networks. Analysis and design of broadband integrated services digital networks, asynchronous time division multiplexing. Laboratory work is included in this course. Prerequisite: ENSC 327 or permission of instructor.

**ENSC 428-4 Digital Communications**

This course will cover the physical-layer design issues in digital communication systems. The major topics covered are: information measures and the notion of channel capacity; link budgets; digital modulation techniques, including the signal space concept and optimal detectors, error performance in noise, suboptimal detectors, pulse shaping, synchronization, and equalization; error control techniques such as block and convolutional codes, as well as comparisons between FEC and ARQ. Laboratory work is included in this course. Prerequisite: ENSC 327.

**ENSC 429-4 Digital Signal Processing**

Discrete time signals and systems, sampling and quantization. The Discrete Fourier Transform and fast transforms. Digital filters, IIR and FIR, design procedures and implementations. Quantization noise in digital filters and transforms. Random signals, the response to linear systems to random signals. Introduction to adaptive systems. Introduction to system architectures for digital signal processing. Laboratory work includes familiarization with digital signal processing software packages. Prerequisite: ENSC 327 or 328, and 380.

**ENSC 440-4 Capstone Engineering Science Project**

This capstone design course is based around a group project that consists of researching, designing, building, and testing the hardware implementation of a working system. The course also includes material on how to design for safety, engineering standards, and human factors. Prerequisite: at least 100 units. Corequisite: ENSC 305. Students with credit for ENSC 340 cannot take ENSC 440 for further credit.

**ENSC 440W-4 Capstone Engineering Science Project**

This capstone design course is based around a group project that consists of research, designing, building, and testing the hardware implementation of a working system. The course also includes material on how to design for safety, engineering standards, and human factors. Prerequisite: at least 100 units. Corequisite: ENSC 305. Students with credit for ENSC 340 cannot take ENSC 440 for further credit. Writing.

**ENSC 441-3 Capstone Design Technical Project I**

Students will combine their technical, marketing, and entrepreneurship knowledge to conceive, and design a product. Also includes project documentation and project management. At the end of the term a comprehensive report is required. Prerequisite: ENSC 312 and 100 units. Corequisite: ENSC 305.

**ENSC 442-3 Capstone Design Technical Project II**

Students will apply their technical, marketing and entrepreneurship knowledge to develop a product that was designed earlier in ENSC 441. Students will then present and be able to see it to a panel of engineers, business and investment community members. Prerequisite: ENSC 441.

**ENSC 450-4 VLSI Systems Design**

An introduction to the design of Very Large Scale Integrated (VLSI) circuits and systems (System-on-Chip, SoC) using mainly CMOS technology. SoC design techniques and applications will be covered. Basic topics will include: CMOS technology and circuit layout rules; combinational and sequential logic; logic simulation; systems design; design for verification and testability; and embedded-processor design and application. An advanced digital design flow based on the VHDL hardware description language will be introduced and exercised in the labs. Prerequisite: ENSC 225 and ENSC 350.

**ENSC 451-4 Real-Time and Embedded Control Systems**

Focuses on implementation and design of embedded computer control systems used in mechatronics and other applications. Many of these systems are real-time in nature, meaning that the computer system must discern the state of the world and react to it within stringent response-time constraints. Upon completion of the course, the student will have a basic understanding of how to design, build and integrate hardware and software for an embedded control application. Hands-on experience will be gained by performing laboratory experiments and doing an embedded computer control project on a mechatronic system. Prerequisite: ENSC 332, 383, and

completion of 90 units. Students who have taken ENSC 351 cannot take this course for further credit.

**ENSC 452-4 Advanced Digital System Design**

Digital system design considerations including methodologies, specification, SoC partitioning, fault tolerance, design reuse, debugging and verification. Prerequisite: ENSC 350 and 351.

**ENSC 460-462-4 Special Topics in Engineering Science**

Studies in areas not included within the undergraduate course offerings of the engineering science program. Prerequisite: permission of the instructor.

**ENSC 470-4 Optical and Laser Engineering Applications**

A practical, hands-on introduction to optical engineering and lasers. Covers the concepts of light, optics (geometric optics, Gaussian optics, multiple optical elements, lens aberrations), laser concepts, operational details of major laser types, laser interactions with optical systems, laser applications in engineering and medicine, complex optical system design and fiber optics. Labs cover optical systems, lasers measurements, optical CAD design, holography. Prerequisite: PHYS 121 or 126 or 141, and MATH 310.

**ENSC 472-4 Rehabilitation Engineering and Assistive Devices**

Provides students with exposure to essential topics in rehabilitation engineering and the design of assistive devices. The course is organized into weekly modules, each of which includes a basic patho-physiology component, an introduction to related rehabilitation engineering technology, and a laboratory/project component. All modules will provide students with (a) an understanding of the scientific basis for a specific area of rehabilitation engineering, (b) experience in the application of standard medical techniques for disability assessment, (c) exposure to biomechanical and physiological measurement techniques, (d) experience in the design (including ISO standards), construction, and evaluation of technological solutions to enhance mobility, communication, sensory function, cognition, and independence in daily activities. Prerequisite: ENSC 372, KIN 201, 308, 448.

**ENSC 474-4 Biomedical Signal and Image Processing**

Develops signal processing techniques of wide applicability, presented in the context of processing and analysis of biomedical images. Forms a sequel to the course ENSC 374-4, Introduction to Biomedical Imaging, which covers acquisition of medical images. The subsequent visualization, processing and analysis tools applied to multidimensional signals such as 2D/3D medical images are covered. Students will become proficient in several basic tools used in signal processing by looking at their multidimensional counterparts for image processing. Prerequisite: ENSC 380-4 and either ENSC 327-4 or ENSC 328-1.

**ENSC 476-4 Biophotonics**

Basic physics of light-biomatter interactions and tissue optics. With this background students will embark on practical issues such as light-induced effects in bio-systems, diagnostic techniques and instrumentation, therapeutic instrumentation and applications, introduction to optical tomography, and finally they will learn about recent developments in optical sensors and applications. Lectures are accompanied by laboratory activities ending with a few basic evaluation projects and a final design and fabrication project. After this course the students will be able to evaluate feasibility of new photonic-based medical devices, such as diagnostic tools and light treatment technologies, and design and optimize these devices. Prerequisite: ENSC 376.

**ENSC 481-4 Designing for Reliability**

Aspects of quality control and reliability in manufacturing environments will be discussed, including stress and strain, failure modes, reliability testing, statistical and experimental methods, and destructive/non destructive testing. Prerequisite: ENSC 330.

**ENSC 483-4 Modern Control Systems**

Analytical representation of the finite dimensional linear systems, analysis and design of linear feedback control systems based on the state space model, and state/output feedback. Topics include: review of the linear spaces and operators, mathematical modelling, state space representation and canonical forms, controllability, observability, realization of transfer function, and solution of the state equation.

Applications include: stability concepts and definitions. Lyapunov's Direct Method, design of the state and output feedback control systems, eigenspectrum assignment, and state estimator design. Prerequisite: ENSC 383.

**ENSC 484-4 Industrial Control Systems**

Examines modern industrial control systems and applications. Topics include: review of industrial sensors and actuators; computer interfacing; ladder logic and programmable logic controllers; industrial computer and programming methods; industrial networks; human-machine interfaces; supervisory control and data acquisition (SCADA); manufacturing execution systems; and enterprise-wide integration. Prerequisite: ENSC 332, 383.

**ENSC 488-4 Introduction to Robotics**

Fundamentals of robotics: mathematical representation of kinematics, dynamics and compliance. Planning and execution of robot trajectories. Feedback from the environment: use of sensors and machine vision. A brief introduction to robot languages. Different application domains for manipulator robots, e.g., assembly, manufacturing, etc. Prerequisite: ENSC 383. Recommended: ENSC 230 is strongly recommended for Systems Option students.

**ENSC 489-4 Computer Aided Design and Manufacturing**

Survey of methods for computer aided design and manufacturing (CAD/CAM), including experience with basic systems in the laboratory component of the course. The student will be introduced to computer integrated manufacturing and flexible manufacturing systems concepts. The use of finite element modeling and analysis will be presented through examples from thermal studies as well as mechanical stress analysis. Issues in constructing and using integrated CAD/CAM in a production environment will be discussed. Emphasis will be on the use of such techniques in light industry, particularly related to electronics manufacturing. A manufacturing cell consisting of several robots and computer control systems will be available for student projects. Prerequisite: ENSC 380.

**ENSC 491-1 Special Project Laboratory**

This course is intended for students wishing to pursue laboratory research on a specific topic outside the standard course offerings. Each student must be sponsored by a faculty member who will oversee the project. A proposal of the student's special project must be submitted to the school at least one month prior to the start of the term in which the course will be taken. The unit value of the project will be assessed during this review phase and the student will be directed to enrol in the appropriate course. Upon completion of a special project laboratory course, the student must submit a copy of the 'deliverables' to the chair of the undergraduate curriculum committee. Prerequisite: permission of the undergraduate curriculum committee chair.

**ENSC 492-2 Special Project Laboratory**

This course is intended for students wishing to pursue laboratory research on a specific topic outside the standard course offerings. Each student must be sponsored by a faculty member who will oversee the project. A proposal of the student's special project must be submitted to the school at least one month prior to the start of the term in which the course will be taken. The unit value of the project will be assessed during this review phase and the student will be directed to register in the appropriate course. Upon completion of a special project laboratory course, the student must submit a copy of the 'deliverables' to the chair of the undergraduate curriculum committee. Prerequisite: permission of the undergraduate curriculum committee chair.

**ENSC 493-3 Special Project Laboratory**

This course is intended for students wishing to pursue laboratory research on a specific topic outside the standard course offerings. Each student must be sponsored by a faculty member who will oversee the project. A proposal of the student's special project must be submitted to the school at least one month prior to the start of the term in which the course will be taken. The unit value of the project will be assessed during this review phase and the student will be directed to register in the appropriate course. Upon completion of a special project laboratory course, the student must submit a copy of the 'deliverables' to the chair of the undergraduate curriculum committee. Prerequisite: permission of the undergraduate curriculum committee chair.

**ENSC 494-4 Special Project Laboratory**

This course is intended for students wishing to pursue laboratory research on a specific topic outside the standard course offerings. Each student must be sponsored by a faculty member who will oversee the project. A proposal of the student's special project must be submitted to the school at least one month prior to the start of the term in which the course will be taken. The unit value of the project will be assessed during this review phase and the student will be directed to register in the appropriate course. Upon completion of a special project laboratory course, the student must submit a copy of the 'deliverables' to the chair of the undergraduate curriculum committee. Prerequisite: permission of the undergraduate curriculum committee chair.

**ENSC 495-4 Introduction to Microelectronic Fabrication**

This provides an introduction to the practice and theory of semiconductor integrated circuit fabrication. The practical area will be covered in lectures and reinforced with laboratory experience where the students will manufacture diodes, transistors and small circuits. Major areas covered will be: clean room technology and economics, silicon wafer production, thermal oxidation, photolithography, thin film deposition (evaporation, sputtering, chemical vapor deposition, epitaxy), etching (wet, plasma, sputtering, reactive ion), diffusion, ion implantation, multi-layer conductor technology, packaging, device yields, plus examples in CMOS and bipolar IC's. This course is directed at any student with a basic background in transistor operation and is also an optional course for those in engineering physics. Prerequisite: ENSC 225 and permission of the instructor.

**ENSC 498-3 Engineering Science Thesis Proposal**

Supervised study, research and preliminary work leading to a formal proposal for the thesis project work in ENSC 499. This activity can be directly augmented by other course work and by directed study. The locale of the work may be external to the University or within a University laboratory, or may bridge the two locations. Supervision may be by technical personnel at an external organization, or by

faculty members, or through some combination. At least one of the supervisors must be a registered professional engineer. A plan for the student's ENSC 498 activities must be submitted to the school at the time of enrolment in the course. Completion of the undergraduate thesis project proposal is the formal requirement of this course and the basis upon which it is graded. Grading will be on a pass/fail basis. Prerequisite: at least 115 units or permission of the academic supervisor.

**ENSC 499-9 Engineering Science Undergraduate Thesis**

A thesis is based on the research or development project that incorporates a significant level of engineering design. This work is typically undertaken in the student's final year, but in no case before the student has completed 115 units. Registration for ENSC 499 takes place in the term in which the thesis will be presented and defended. The locale of the work, supervision and other arrangements follow those for ENSC 498. Grading of the thesis will be on a pass/fail basis, but recognition will be given to outstanding work. Prerequisite: ENSC 498.

**ENSC 801-3 Linear Systems Theory**

State-space analysis of finite dimensional continuous and discrete time linear systems. Linear vector spaces, linear operators, normed linear spaces, and inner product spaces. Fundamentals of matrix algebra; generalized inverses, solution of  $Ax=y$  and  $AXB=Y$ , least square and recursive least square estimation, induced norm and matrix measures, functions of a square matrix, Cayley-Hamilton and Sylvester's theorems, Singular Value Decomposition (SVD) with applications. Analytical representation of linear systems, state-space formulation, solution of the state equation and determination of the system's response. Controllability, observability, duality, canonical forms, and minimal realization concepts. Stability analysis and the Lyapunov's method. Prerequisite: graduate standing.

**ENSC 802-3 Stochastic Systems**

The application of theories in probability, random variables and stochastic processes in the analysis and modelling of engineering systems. topics include: a review of probability and random variables; random deviate generation; convergence of random sequences; random processes; auto correlation and power spectral-density; linear systems with stochastic inputs; mean-square calculus; AR and ARMA models; Markov chains; elementary queueing theory; an introduction to estimation theory. Areas of application include digital communications, speech and image processing, control, radar and Monte Carlo simulations. Prerequisite: graduate standing.

**ENSC 803-3 Writing for Publication**

Through discourse analysis and simulation of the publication process, ENSC 803 enables the analysis and refinement of writing processes and written styles when preparing journal articles, oral conference presentations, and poster presentations in professional contexts. Students will write and revise an article suitable for publication in a professional journal, design a poster presentation, and design and deliver an oral conference presentation. Additionally, students will blind review a peer's journal article and will participate in a series of team-based discourse analysis exercises. ENSC 803 will also cover departmental requirements and University regulations related to thesis completion and submission. This course will not count towards the student's CGPA but will appear as a grade on the transcript. This course cannot be used as one of the course requirements towards the degree.

**ENSC 805-3 Advanced Digital Communications**

This course discusses the fundamental techniques used in the physical layer of a digital communication

system. The main topics are as follow: digital modulation, including complex baseband representations, the concept of the signal space, optimal demodulation, bit error probability analysis, as well as timing and carrier recovery; error control techniques, including soft decision decoding and the Viterbi algorithms; and various kinds of equalization (linear, decision feedback, and maximum likelihood sequences estimation). Sub topics of the equalization section include pulse shaping and eye diagrams. The emphasis may vary slightly in different offerings. Prerequisite: ENSC 428 or equivalent. ENSC 802 (as a corequisite) or permission of instructor.

**ENSC 806-3 Spread-Spectrum Communications**

This course first overviews the characteristics of spread-spectrum systems (S3) in view of the trade-off between signal bandwidth and benefits that result from wideband signaling. The basic S3 techniques such as direct-sequence (DS), frequency-hopping (FH), time-hopping (TH), and hybrid of above, are introduced and compared in details. A performance consideration is given for the DS and FH cases to illustrate the processing gain with respect to narrowband signaling in the presence of interference and jamming. Next, it covers all aspects of spread-spectrum transmission over a physical multiple-access channel: signal generation, synchronization, modulation, and error-correcting coding of spread spectrum multiple access, known as CDMA (Code Division Multiple Access), signals. It relates these physical layer functions to link and network layer properties involving cellular coverage, Erlang capacity, and network control. Prerequisite: ENSC 802 or permission of instructor.

**ENSC 808-3 Information Theory**

Information measures: entropy, relative entropy, mutual information, entropy rate, differential entropy. Asymptotic Equipartition Property. Lossless data compression: Kraft inequality, Huffman code, Shannon code, Arithmetic coding. Channel capacity: binary symmetric channel, binary erasure channel, Shannon's channel coding theorem, Gaussian channel, feedback. Prerequisite: STAT 270 or equivalent.

**ENSC 810-3 Statistical Signal Processing**

Processing techniques for continuous and discrete signals with initially unknown or time-varying characteristics. Parameter estimation; Bayes, MAP, maximum likelihood, least squares the Cramer-Rao bound. Linear estimation, prediction, power spectrum estimation, lattice filters. Adaptive filtering by LMS and recursive least squares. Kalman filtering. Eigenmethods for spectral estimation. Implementation issues and numerical methods of computation are considered throughout. Prerequisite: ENSC 802 and 429 or their equivalents.

**ENSC 815-3 Multirate Signal Processing**

An advanced digital signal processing course. Topics include: sampling rate conversion; multirate and polyphase representations and implementations; multirate filter banks and the discrete wavelet transform; modulated filter banks. Applications are drawn from areas such as transmultiplexing, echo suppression, signal compression and modulation. Prerequisite: ENSC 429 or equivalent.

**ENSC 820-3 Engineering Management for Development Projects**

This course focuses on the management and reporting activities of typical engineering development projects. Through seminars and workshops it builds the student's skills at estimating project cost and schedule, keeping a project on track, and handing over the completed project to a customer or another team. A writing workshop emphasizes techniques for writing proposals, and writing and controlling documentation. Note that ENSC 820 will not count

towards the course work requirement of students enrolled in the MASc and PhD programs.

### **ENSC 832-3 Mobile and Personal Communications**

Propagation phenomena, modulation techniques and system design considerations for mobile and personal networks. Topics include: fading and shadowing, noise and interference effects, analog and digital transmission, cellular designs, multiple access techniques. Prerequisite: ENSC 802 or permission of instructor.

### **ENSC 833-3 Network Protocols and Performance**

This course covers the techniques needed to understand and analyse modern communications networks. The main topics are as follow: practical techniques for the design and performance analysis of data communication networks; performance analysis of error control, flow and congestion control, and routing; networks of queues using stochastic and mean value analysis; polling and random access LANs and MANs; wireless networks; broadband integrated services digital networks and asynchronous transfer mode; optical networks. Prerequisite: ENSC 802 or permission of instructor.

### **ENSC 834-3 Fundamentals of Optical Communication**

This course discusses modern fibre optics communication systems. The major topics to be covered are as follow: the analysis of optical transmission media, including multimode and single mode technology; bandwidth limitations imposed by dispersive behavior of fibre; modified fibre profiles for third generation fibre communication systems; solitons; semiconductor laser diodes; external modulation; PIN photo diodes and avalanche photo detectors; bandwidth and noise limitations; optical amplifiers; semiconductor laser amplifiers; doped fibre amplifiers; optical receiver and transmitter circuits; quantum limited receiver performance; BER performance; optical communication networks.

### **ENSC 835-3 Communication Networks**

Techniques needed to understand and analyze modern data communications networks. Basic architecture of packet networks and their network elements (switches, routers, bridges), and the protocols used to enable transmission of packets through the network. Techniques for collection, characterization, and modeling of traffic in packet networks. Aspects of traffic management, such as call admission control and congestion control algorithms in packet networks and the influence of traffic on network performance. Prerequisite: ENSC 427 or permission of the instructor.

### **ENSC 850-3 Semiconductor Device Theory**

Detailed treatment at the graduate level of semiconductor fundamentals and theory. Electronic properties and characteristics of selected semiconductor devices: pn junctions, Schottky barrier junctions, silicon-based heterojunctions and ohmic contacts; bipolar junction transistors; field effect transistors; heterostructures; charge coupled devices and microwave devices. Prerequisite: PHYS 365 or permission of instructor.

### **ENSC 851-3 Integrated Circuit Technology**

Review of semiconductor physics. Technology of semiconductor devices and integrated circuits: material evaluation, crystal growth, doping, epitaxy, thermal diffusion, ion implantation, lithography and device patterning, and thin film formation. Design and fabrication of active and passive semiconductor devices, packaging techniques and reliability of integrated circuits.

### **ENSC 852-3 Analog Integrated Circuits**

Models for integrated circuit activity and passive devices and their implementation; computer aided

design tools and their use in designing analog integrated circuits; analysis of single transistor amplifiers; current sources, current mirrors, and voltage references; op-amps characteristics, analyses and circuit design examples; frequency response of integrated circuits; noise in integrated circuits; low power integrated circuits; non-linear analog integrated circuits. The students will be required to either design, fabricate and test simple analog ICs in the microelectronics lab, or do a project which involves the design, analysis, modeling and simulation of an analog integrated circuit. Prerequisite: ENSC 850 or permission of instructor.

### **ENSC 853-3 Digital Semiconductor Circuits and Devices**

MOS device electronics. Second Order Effects in MOS transistors. BJT device electronics. Static and transient analysis of inverters. Digital gates, circuits and circuit techniques. Speed and power dissipation. Memory systems. Gate arrays, semicustom and customized integrated circuits. CAD tools. Students are required to complete a project.

### **ENSC 854-3 Integrated Microsensors and Actuators**

Microelectronic transducer principles, classification, fabrication and application areas. Silicon micromachining and its application to integrated microelectronic sensors and actuators. CMOS compatible micromachining, static, dynamic and kinematic microactuator fabrication. Integrated transducer system design and applications. Students will be required to complete a micromachining project in the microfabrication lab at ENSC. Prerequisite: ENSC 370, 453, 495 or permission of instructor.

### **ENSC 855-3 Modern Semiconductor Devices**

The course will present the physical concepts required to participate in (or gain appreciation for) the field of high performance, high speed semiconductor devices used in telecommunication systems. Topics include: basic semiconductor energy band structure, low and high field transport in semiconductors, ballistic transport, the depletion approximation and beyond, heterostructures, band line-ups, lattice mismatched heterostructures – strain as design parameter, charge recombination, operating principles of modern semiconductor devices such as SiGe or III-V HBTs, MESFETs/HEMTs, photodetectors, quantum well lasers.

### **ENSC 856-3 Compound Semiconductor Device Technology**

The course will present the necessary tools and techniques required in the fabrication of compound semiconductor devices. Because of the wide disparity between III-V and silicon semiconductor devices, the course is orthogonal to the silicon device fabrication course ENSC 851. Topics to be covered include: basics of HBTs and HEMTs, elements of III-V compound semiconductor materials science, III-V substrate preparation and properties, doping of III-V compounds and amphoteric behavior, epitaxial growth by MBE, MOCVD, characterization of epitaxial layers, lithography: optical and electron beam, Schottky and ohmic contact formation, plasma processing techniques such as RIE and PECVD.

### **ENSC 857-3 Electronics for Digital Imaging**

This course is targeted towards graduate level engineering students and covers major aspects of the electronic circuit design and device fabrication of digital imaging circuits and devices used in imaging applications stemming from silicon semiconductor technology. These integrated image sensors are appearing in a wide variety of applications ranging from amorphous silicon flat panel imagers for medical imaging to low cost, crystalline silicon integrated circuit cameras. Integrated image sensor technology offers the benefits of a cost-effective, imaging system capable of performing on-chip signal processing

functions leading to higher image quality.

Prerequisite: ENSC 224, or equivalent, ENSC 325 or equivalent.

### **ENSC 858-3 VLSI Systems Design**

Topics of relevance to the design of very large scale integrated (VLSI) circuits in CMOS technologies are covered. Key design techniques and fundamental limitations for high-speed computer and communication circuits are discussed. Most of the material will be presented through a series of case studies. The main topics are: CMOS technology, cell library design, memory design (SRAM, DRAM, ROM, PLA), arithmetic unit design, and embedded processor design. Parallelism, pipelining, and clocking are also discussed. Prerequisite: ENSC 450 or equivalent, or permission of the instructor.

### **ENSC 859-3 Biomedical Microdevices and Systems**

This course introduces students to microdevices and systems with applications in biology, chemistry, and medicine. Topics include microfabrication techniques of biocompatible materials including polymers; microfluidic theory and components; electro-osmotic flow and separation techniques; system integration; and a selection of key applications including micro total analysis systems, cell and tissue applications, implantable/transdermal devices, biosensors, and biotechnology (PCR, DNA chips). Recommended, ENSC 330; ENSC 495/851 or ENSC 854.

### **ENSC 861-3 Source Coding in Digital Communications**

This course presents basics of information theory and source coding with applications to speech/audio, images/video and multimedia. The course first covers the topics of entropy, information, channel capacity and rate-distortion functions. Various techniques used in source coding, such as entropy coding, scalar and vector quantization, prediction, transforms, analysis by synthesis, and model based coding are then discussed. Prerequisite: ENSC 802 or equivalent.

### **ENSC 883-3 Optimal Control Theory**

Review of finite dimensional linear systems represented in state space formulation. Bellman's principle of optimality and dynamic programming with applications to control of discrete and continuous time systems. Introduction to variational calculus, Pontryagin's maximum principle, Hamilton-Jacoby-Bellman Equation, and variational treatment of control problems. Several optimal control problems such as optimal linear quadratic regulator (LQR), optimal tracking and suboptimal output controllers will be discussed. Prerequisite: ENSC 483 or 801.

### **ENSC 887-3 Computational Robotics**

A main goal of computational robotics is to automatically synthesize robot motions to achieve a given task. This course discusses geometric and algorithmic issues that arise in such an endeavour. For example: how can a robot plan its own collision-free motions? How does it grasp a given object? How do we account for uncertainty? The course employs a broad range of tools from computational geometry, mechanics, algorithms and control. The material covered also finds applications in designing devices for automation and in computer animation. The course involves a substantial project which exposes students to practical and implementation issues involved in building automatic motion planning capabilities for robotic systems. Prerequisite: ENSC 488 and a basic course in data structures and algorithms, or permission of the instructor.

### **ENSC 888-3 Finite-Element Methods in Engineering**

Overview of FEM and its use in industry mathematical foundations of FEM; Galerkin method; finite element interpretation of physical problems in one, two and



three dimensions; numerical techniques for storing and solving sparse matrices; checking for convergence, error estimation; pre- and post-processing; automatic mesh generation.

### **ENSC 890-3 Advanced Robotics: Mechanics and Control**

Robotic applications are extensively involved in various fields such as manufacturing and health care with new, efficient tools and methods having been developed for modelling and co-ordinating such devices. The main focus of this course is to introduce these tools and methods for kinematic and dynamic modelling approaches. These new approaches allow more intuitive and geometrical representation of motion and interaction in any articulated multi-body system such as robotics devices. The course offers valuable background for students involved in computer graphics (e.g. animation), human/machine interface (e.g. haptic interface), control engineers (e.g. trajectory planning, master/slave system) and robotic designers. The course involves individual projects in modelling and co-ordination of a robotic device. Prerequisite: introductory course in robotics (ENSC 488) or permission of the instructor.

### **ENSC 891-3 Directed Studies I**

### **ENSC 892-3 Directed Studies II**

### **ENSC 893-3 Special Topics I**

### **ENSC 894-3 Special Topics II**

### **ENSC 895-3 Special Topics III**

### **ENSC 896-1.5 MEng Project (Completion)**

Students who do not complete ENSC 897 in one term must enrol for this course in all subsequent terms.

### **ENSC 897-3 MEng Project**

### **ENSC 898-6 MASc Thesis**

### **ENSC 899-6 PhD Thesis**

## **English ENGL Faculty of Arts and Social Sciences**

### **ENGL 101W-3 Introduction to Fiction**

Examines selected works of literature in order to develop a critical awareness of literary techniques and contexts in the representation of experience. May include the comparative study of works in related literary and artistic genres, and will pay some attention to literature of the 20th century. Includes attention to writing skills. Writing/Breadth-Humanities.

### **ENGL 102W-3 Introduction to Poetry**

Examines selected works of literature in order to develop a critical awareness of literary techniques and contexts in the representation of experience. May include the comparative study of works in related literary and artistic genres, and will pay some attention to literature of the 20th century. Includes attention to writing skills. Writing/Breadth-Humanities.

### **ENGL 103W-3 Introduction to Drama**

Examines selected works of literature in order to develop a critical awareness of literary techniques and contexts in the representation of experience. May include the comparative study of works in related literary and artistic genres, and will pay some attention to literature of the 20th century. Includes attention to writing skills. Writing/Breadth-Humanities.

### **ENGL 104W-3 Introduction to Prose Genres**

The literary study of a variety of prose genres, such as the essay, biography, autobiography, travel narrative, and journalistic writing. May include works which challenge the boundary between fiction and non-fiction. The course is intended to develop a critical awareness of literary techniques and contexts in the representation of experience. Includes attention to writing skills. Writing/Breadth-Humanities.

### **ENGL 105W-3 Introduction to Issues in Literature and Culture**

An introduction to the study of literature within the wider cultural field, with a focus on contemporary issues across genres and media. Writing/Breadth-Humanities.

### **ENGL 199W-3 Introduction to University Writing**

An introduction to reading and writing in the academic disciplines. Prerequisite: 12 units. Writing.

### **ENGL 201-3 Medieval Literature**

Anglo-Saxon literature and Middle English literature, in translation when necessary. Prerequisite: two 100 division English courses. Students who have taken ENGL 204 may not take this course for further credit. Breadth-Humanities.

### **ENGL 203-3 Early Modern Literature**

A survey of the literature of the period from 1485 to Milton. Prerequisite: two 100 division English courses. Students who have taken ENGL 204 may not take this course for further credit. Breadth-Humanities.

### **ENGL 205-3 Restoration and Eighteenth Century Literature**

A survey of the literature of the period from 1660 to 1800. May include writing from North America. Prerequisite: two 100 division English courses. Breadth-Humanities.

### **ENGL 206-3 Nineteenth Century Literatures in English**

The study of nineteenth century North American, British, and/or Post-colonial literatures. May include some writing from North America. Prerequisite: two 100 division English courses. Breadth-Humanities.

### **ENGL 207-3 Twentieth Century Literatures in English**

The study of twentieth century North American, British, and/or Post-colonial literatures. Prerequisite: two 100 division English courses. Breadth-Humanities.

### **ENGL 210W-3 Writing and Critical Thinking**

Advanced practice of writing critical, expository prose in a rhetorical context. Prerequisite: two 100-level English courses, one of which must be 199 or 3 transfer credits in English writing. Writing.

### **ENGL 212-3 Metrics and Prosody**

A study of different historical methods of measuring poetry in English, with practice in scanning and analyzing poems using different methods of quantitative analysis (e.g. Syllabic, rhythmic, alliterative). Prerequisite: two 100 division English courses. ENGL 102 is recommended.

### **ENGL 214-3 History and Principles of Rhetoric**

Introduction to the history and principles of rhetoric, and their application to the creation and analysis of written, visual, and other forms of persuasion. Prerequisite: two 100 division English courses.

### **ENGL 216-3 History and Principles of Literary Criticism**

The study of selected works in the history of literary criticism, up to and including modern and contemporary movements in criticism. Prerequisite: two 100 division English courses.

### **ENGL 300-4 Old English**

The study of the basics of the Old English language and the reading of several texts of relative simplicity. Prerequisite: two 100 division English courses, and two 200 division English courses.

### **ENGL 304-4 Studies in Medieval Literature**

Studies of medieval authors, genres or issues, from 500-1500. Texts will be studied in the original language or in translation. Prerequisite: two 100 division English courses, and two 200 division English courses.

### **ENGL 306-4 Chaucer**

The study of selected works by Geoffrey Chaucer, especially *The Canterbury Tales*, read in the language in which they were written and situated in the context of 14th century European culture. Prerequisite: two 100 division English courses, and two 200 division English courses.

### **ENGL 310-4 Studies in Early Modern Literature Excluding Shakespeare**

The study of non-Shakespearean Early Modern Literature. May be defined by genre, theme, or author. Prerequisite: two 100 division English courses, and two 200 division English courses.

### **ENGL 311-4 Early Shakespeare**

A study of the works of William Shakespeare performed before 1601. Prerequisite: two 100 division English courses, and two 200 division English course. Students may take both ENGL 311 and 313 for credit towards the English major. Students with credit for ENGL 312 may not take this course for further credit without permission of the department.

### **ENGL 313-4 Late Shakespeare**

A study of the works of Shakespeare performed after 1600. Prerequisite: two 100 division English courses, and two 200 division English courses. Students may take both ENGL 311 and 313 for credit towards the English major. Students with credit for ENGL 312 may not take this course for further credit without permission of the department.

### **ENGL 315-4 Studies in 17th Century Non-Dramatic Literature**

Selected works of seventeenth-century poetry and/or prose, situated in their cultural context. May include some writing from North America. Prerequisite: two 100 division English courses, and two 200 division English courses. Students with credit for ENGL 314 may not take this course for further credit.

### **ENGL 320-4 Studies in 18th Century Literature (1660-1800)**

The study of selected works of late seventeenth century and eighteenth century literature, with an emphasis on genres other than the novel. May include some writing from outside Britain, and may be organized by various critical issues or approaches. Prerequisite: two 100 division English courses, and two 200 division English courses.

### **ENGL 322-4 Studies in the Eighteenth Century British Novel**

The study of selected 18th century novels, situated in their cultural context. Prerequisite: two 100 division English courses, and two 200 division English courses.

### **ENGL 327-4 Studies in Romantic Literature**

Addresses issues in Romantic literature in English. May include texts in a variety of genres and be organized according to various critical approaches. Prerequisite: two 100 division English courses, and two 200 division English courses.

### **ENGL 330-4 Studies in Victorian Literature**

Addresses specific issues in Victorian literature in English. May be organized by author, genre, or critical approach and may include literature from outside of Britain. Prerequisite: two 100 division English courses and two 200 division English courses. Students with credit in ENGL 329 or 333 may not take this course for further credit.

### **ENGL 340-4 Studies in 20th Century British Literature before 1945**

The study of selected works of British literature written from 1900 to 1945. May be organized by various critical issues or approaches. Prerequisite: two 100 division English courses, and two 200 division English courses.

**ENGL 342-4 Studies in British Literature since 1945**

The study of selected works of British literature written since 1945. May be organized by various critical issues and approaches. Prerequisite: two 100 division English courses, and two 200 division English courses.

**ENGL 347-4 Studies in American Literature before 1900**

The study of selected works of American literature written before 1900. This course may survey a particular era or topic, and may be organized by various critical issues or approaches. Prerequisite: two 100 division English courses, and two 200 division English courses. Students with credit for ENGL 344 or 348 may not take this course for further credit.

**ENGL 349-4 Studies in American Literature since 1900**

Addresses issues in American literature. May be organized by various critical issues or approaches. Prerequisite: two 100 division English courses and two 200 division English courses.

**ENGL 354-4 Studies in Canadian Literature before 1920**

The study of selected works of Canadian literature written before 1920. Prerequisite: two 100 division English courses, and two 200 division English courses.

**ENGL 357-4 Studies in Canadian Literature since 1920**

The study of selected works of Canadian literature written after 1920. Prerequisite: two 100 division English courses, and two 200 division English courses. Students with credit for ENGL 356 or 358 may not take this course for further credit.

**ENGL 359-4 Studies in the Literature of British Columbia**

The study of selected works of British Columbian literature. Prerequisite: two 100 division English courses, and two 200 division English courses.

**ENGL 360-4 Popular Writing by Indigenous Authors**

Examines works of popular fiction by Indigenous authors, and their use of specific genres (e.g. the mystery novel, vampire thriller, sci fi, comic book). Prerequisite: two 100 division English courses, and two 200 division English courses. Students who have taken FNST 322 under this topic may not take this course for further credit. ENGL 360 and FNST 360 are identical and students may not take both courses for credit.

**ENGL 364-4 Literary Criticism: History, Theory, and Practice**

The study and application of select literary theories. Prerequisite: two 100 division English courses, and two 200 division English courses. Recommended: ENGL 216.

**ENGL 371-4 Writing: Theory and Practice**

Students will engage in theoretically informed practice of writing in various non-academic genres. Emphasis will be placed on the kinds of writing that students are likely to use after graduation. Prerequisite: two 100 division English courses and two 200 division English courses. Recommended: one of English 199, 210, or 214.

**ENGL 372-4 Creative Writing**

A seminar-workshop in creative writing for students who have an interest and some writing experience in poetry, fiction, or drama. The emphasis of the course may vary from term to term. Prerequisite: two 100 division English courses and two 200 division English courses. Particular prerequisites: permission of the department is required.

**ENGL 375-4 Studies in Rhetoric**

Advanced study in the theory and/or history of rhetoric. Prerequisite: two 100 division English courses, and two 200 division English courses. Recommended: one of English 199, 210, or 214.

**ENGL 376-4 Special Studies**

Prerequisite: two 100 division English courses, and two 200 division English courses.

**ENGL 377-4 Italy Field School I**

Studies in the history, art, and letters of Italy as they inform the study of literature in English. Course may be organized by theme, critical approach, historical period, or individual author, and will be supplemented with related field trips. Prerequisite: 45 units, including two 100 division English courses, and two 200 division English courses; or permission of the field school director. Corequisite: ENGL 378. Students who participated in the English Department Field School in Italy prior to 1087 may not take this course for further credit.

**ENGL 378-4 Italy Field School II**

Studies in the history, art, and letters of Italy as they inform the study of literature in English. Course may be organized by theme, critical approach, historical period, or individual author, and will be supplemented with related field trips. Prerequisite: 45 units, including two 100 division English courses, and two 200 division English courses; or permission of the field school director. Corequisite: ENGL 377. Students who participated in the English Department Field School in Italy prior to 1087 may not take this course for further credit.

**ENGL 383-4 Studies in Popular Literature and Culture**

A study of popular literature and its cultural contexts. May be defined by genre, author, period, or critical approach. Prerequisite: two 100 division English courses, and two 200 division English courses. Students with credit for ENGL 363 may not take this course for further credit.

**ENGL 384-3 Crime and Literature**

Questions of crime and criminal justice in novels and other forms of fiction are explored. Includes a critical discussion about crime plots, their social settings and outcomes, the psychology and sociology of criminal characters and their victims, and whether justice was achieved or denied in the course of the plot. Writing intensive. Prerequisite: for students in an approved English plan only: two 100 division ENGL courses and two 200 division ENGL courses. This course is identical to CRIM 384 and both courses cannot be taken for credit. Students who have taken CRIM 416/417/418 as Crime and Literature may not take this course for further credit.

**ENGL 387-4 Studies in Children's Literature**

The study of selected works of children's literature from different periods and places. The works will be considered in relation to literary theory, and may be organized by different critical issues or approaches. Prerequisite: two 100 division English courses, and two 200 division English courses. Students with credit for ENGL 367 may not take this course for further credit.

**ENGL 392-4 Studies in World Literatures in English**

The study of a selection of literary works in English, mainly from regions other than Canada, Britain and the United States. The course may focus on one or several literatures. Prerequisite: two 100 division English courses, and two 200 division English courses.

**ENGL 394-4 Studies in Asian Diasporic Literatures**

Studies a selection of literary works in English from the Asian Diaspora. May be organized by cultural movements, critical issues, or theoretical approaches.

The historical and regional focus of the course will vary. Prerequisite: two 100 division English courses, and two 200 division English courses.

**ENGL 399-3 Big Stories**

The tracing of a specific narrative, type of narrative, or theme across a broad expanse of time and/or a variety of cultures. Designed for non-English majors. Prerequisite: 60 units. This course may not be counted for credit toward an English major or minor. Breadth-Humanities.

**ENGL 400W-4 Advanced Old English**

Intensive study of several Old English poems. Prerequisite: ENGL 300. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 404W-4 Topics in Medieval Literature**

Advanced study of specific aspects of Medieval literature. May be defined by author, genre, or critical approach. Prerequisite: ENGL 304 or 306. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 407W-4 Topics in Early English Drama**

The study of selected dramatic works written in English prior to the Reformation. May be organized by author, genre, or critical approach. Does not include Shakespeare. Prerequisite: one of ENGL 304, 306, 310, 311, 313, or 315. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 410W-4 Topics in Early Modern English Non-Dramatic Literature**

The study of selected works of Early Modern poetry and prose written in English, and situated in their cultural context. May be organized by author, genre, or critical approach. Prerequisite: one of ENGL 304, 306, 310, 311, 313 or 315. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 416W-4 Milton**

The intensive study of selected works by John Milton, situated in their cultural context. Prerequisite: One of ENGL 304, 306, 310, 311, 313, or 315. Students who have taken ENGL 316 may not take this course for credit. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 420W-4 Topics in 18th Century Literature**

Addresses specific issues in 18th century literature in English. May be organized by author, genre, or critical approach. Prerequisite: ENGL 320 or 322. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 427W-4 Topics in the Romantic Period**

Addresses specific issues in romantic literature in English. May be organized by author, genre, or critical approach. Prerequisite: ENGL 327. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 434W-4 Topics in the Victorian Period**

Examines issues in Victorian literature and culture in a variety of genres and media from diverse geopolitical regions organized by various critical questions and approaches. Prerequisite: ENGL 330. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 435W-4 Topics in the Literature of the Long 19th Century**

Explores issues across nineteenth century literature and culture in a variety of genres and media from diverse geopolitical regions organized by various critical questions and approaches. Prerequisite: ENGL 330 or 340. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 436W-4 Topics in Literature of Transition**

Examines changes in society, culture and literature in the transition from the late-nineteenth to early-twentieth century, through a selection of works in a variety of genres and media from diverse geopolitical regions organized by various critical issues and approaches. Prerequisite: one of ENGL 330, 340, 347, or 354. Students who have taken ENGL 336 may not take this course for further credit. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 438W-4 Topics in Modernism**

Addresses issues in Modernism. May include Canadian, British, American and other literatures. Prerequisite: ENGL 340, 347, or 354. Reserved for English honors, major, joint major and minor students. Students who have taken ENGL 338 may not take this course for further credit. Writing.

**ENGL 440W-4 Topics in British Literature Post 1945**

The intensive study of selected works of British literature written after 1945. May be organized by author, genre, or critical approach. Prerequisite: ENGL 342. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 441-4 Directed Studies A**

Prerequisite: two 100 division English courses, two 200 division English courses and two 300 division English courses. Reserved for English honors, major, joint major and minor students. Admission is by permission of the instructor and the Department.

**ENGL 442-2 Directed Studies B**

Prerequisite: two 100 division English courses, two 200 division English courses and two 300 division English courses. Reserved for English honors, major, joint major and minor students. Admission is by permission of the instructor and the department.

**ENGL 443-4 Directed Studies C**

Prerequisite: two 100 division English courses, two 200 division English courses, and two 300 division English courses. Reserved for English honors, major, joint major and minor students. Admission is by permission of the instructor and the department.

**ENGL 444-2 Directed Studies D**

Prerequisite: two 100 division English courses, two 200 division English courses and two 300 division English courses. Reserved for English honors, major, joint major and minor students. Admission is by permission of the instructor and the department.

**ENGL 447W-4 Topics in American Literature before 1900**

The intensive study of selected works of American literature written before 1900. May be organized by author, genre, or critical approach. Prerequisite: ENGL 347. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 449W-4 Topics in American Literature since 1900**

The intensive study of selected works of American literature written since 1900. May be organized by author, genre, or critical approach. Prerequisite: ENGL 349. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 453W-4 Aboriginal Literatures**

The intensive study of selected works of aboriginal writers. May be organized by author, genre, or critical approach. Prerequisite: one 300 division English course. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 454W-4 North American Poetry and Poetics**

The intensive study of selected works of North American poets and/or poetry theorists. May be organized by author, genre, or critical approach.

Prerequisite: one 300 division English course.

Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 455W-4 Topics in Canadian Literature**

Advanced seminar in Canadian literature. May be organized by author, genre, or critical approach. Prerequisite: one of ENGL 354, 357, or 359. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 457W-4 Topics in Asian North American Literature**

Investigates topics in Asian-Canadian and/or Asian-American literature. The course may vary according to theoretical, historical or geographical focus. Prerequisite: one 300 division English course. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 461-3 Practicum I**

First term of work experience in the English Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: normally 30 units with a CGPA of 3.0; credit or standing in any two of ENGL 101, 102, 103, 104, 105, and 199, and two 200 division English courses, one of which must be ENGL 204 or 205. Students should apply to the Faculty of Arts co-operative education co-ordinator by the end of the third week of the term preceding the employment term.

**ENGL 462-3 Practicum II**

Second term of work experience in the English Co-operative Education Program. Units for this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of ENGL 461 and normally 45 units with CGPA of 3.0; credit or standing in any two of ENGL 101, 102, 103, 104, 105, and 199, and two 200 division English courses, one of which must be ENGL 204 or 205. Students should apply to the Faculty of Arts co-operative education co-ordinator by the end of the third week of the term preceding the employment term.

**ENGL 463-3 Practicum III**

Third term of work experience in the English Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of ENGL 462 and normally 60 units with CGPA of 3.0; credit or standing in any two of ENGL 101, 102, 103, 104, 105, and 199, and two 200 division English courses, one of which must be ENGL 204 or 205. Students should apply to the Faculty of Arts co-operative education co-ordinator by the end of the third week of the term preceding the employment term.

**ENGL 464-3 Practicum IV**

Fourth term of work experience in the English Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of ENGL 463 and normally 75 units with CGPA of 3.0; credit or standing in any two of ENGL 101, 102, 103, 104, 105, and 199, and two 200 division English courses, one of which must be ENGL 204 or 205. Students should apply to the Faculty of Arts co-operative education co-ordinator by the end of the third week of the term preceding the employment term.

**ENGL 465W-4 Topics in Critical Theory**

Advanced seminar in literary theory. Prerequisite: ENGL 364. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 468W-4 Topics in Drama**

Advanced seminar in drama. May be organized by author, genre, or critical approach. Prerequisite: one 300 division English course. Reserved for English

honors, major, joint major and minor students. Writing.

**ENGL 470W-4 Studies in the English Language**

Focussed studies within linguistic, pragmatic, historical and social theories of the English language. Prerequisite: one 300 division English course. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 475W-4 Topics in Rhetoric**

Seminar in a particular topic, approach, or author in the field of rhetoric and writing. Prerequisite: ENGL 214 and one 300 division English course; or ENGL 375. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 482W-4 Topics in Cultural Studies**

Investigates interconnections between literature and culture through the study of selected texts. Prerequisite: one 300 division English course. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 484W-4 Topics in Literature and Media**

Investigates and theorizes the relation of literature and media (manuscript, print, visual, aural, electronic, and/or oral). Prerequisite: one 300 division English course. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 486W-4 Topics in Gender, Sexuality and Literature**

The study of selected literary works as they intersect with and are shaped by issues of gender and sexuality. May be organized by theme, critical approach, historical period, or individual author. Prerequisite: one 300 division English course. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 487W-4 Topics in Children's Literature**

Advanced seminar in children's literature. May be organized by author, genre, or critical approach. Prerequisite: ENGL 387. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 492W-4 Topics in World Literatures in English**

The intensive study of a selection of literary works in English, mainly from regions other than Canada, Britain and the United States. The course may focus on one or several literatures or individual, authors, and will be organized according to specific critical methodologies. Prerequisite: one 300 division English course. Reserved for English honors, major, joint major and minor students. Writing.

**ENGL 494-4 Honors Research and Methods Seminar**

Introduces students enrolled in the English honors program to the basic methodological issues and procedures that define the field, and provides them with the opportunity to work with a faculty supervisor in researching a specific topic for their honors graduating essay. Prerequisite: permission of the department, plus normally a minimum of 90 units, including credit or standing in two 100 division English courses, two 200 division English courses, and four 300 or 400 division English courses, one of which must be ENGL 364.

**ENGL 496-4 Honors Graduating Essay**

Prerequisite: lower division requirements for the English major. Open only to students who have been accepted into the English honors program, and who have completed ENGL 494.

**ENGL 810-4 Studies in Theory I**

Provides a detailed and contextual overview of critical debates in twentieth-century literary and cultural theory. The critical lineage explored will vary according to theoretical focus.

**ENGL 811-4 Studies in Theory II**

Explores specific critical issues, approaches, or movements in literary and cultural theory. The course will vary according to theoretical and historical focus.

**ENGL 820-4 Studies in Print Culture Theory**

Introduces the history of print culture along with a variety of theoretical approaches. Students enrolled in the Print Culture program are required to take this course.

**ENGL 821-4 Studies in Manuscript, Print and Media Culture**

Explores critical issues, approaches, or movements in manuscript, print, and media culture. The course will vary according to geographical and historical focus and theoretical approach.

**ENGL 830-4 Studies in Medieval Literature**

Examines selected medieval works in a variety of genres from Britain and Europe, organized by critical issues or theoretical approaches. May include works in a variety of media and study texts in the original language or in translation.

**ENGL 831-4 Studies in Early Modern Literature**

Examines selected works of the sixteenth and seventeenth centuries organized by critical issues or theoretical approaches. May include some writing from outside Britain.

**ENGL 832-4 Studies in Eighteenth-Century Literature**

Examines selected eighteenth-century works in a variety of genres organized by cultural movements, critical issues, or theoretical approaches. May include works in a variety of media and from diverse geopolitical regions.

**ENGL 833-4 Studies in Nineteenth-Century Literature**

Examines selected nineteenth-century works in a variety of genres organized by cultural movements, critical issues, or theoretical approaches. May include works in a variety of media and from diverse geopolitical regions.

**ENGL 834-4 Studies in Twentieth-Century Literature**

Examines selected twentieth-century works in a variety of genres, organized by cultural movements, critical issues, or theoretical approaches. May include works in various media and explore Canadian, British, American and other literatures.

**ENGL 835-4 Studies in Contemporary Literature**

Examines selected contemporary literary works in a variety of genres, organized by cultural movements, critical issues, or theoretical approaches. May include works in various media and explore Canadian, British, American and other literatures.

**ENGL 840-4 Studies in American Literature**

Examines selected works of American literature in a variety of genres, organized by cultural movements, critical issues, theoretical approaches, or historical periods. May include works in various media, and explore relations between American and other national or regional literatures.

**ENGL 841-4 Studies in Canadian Literature**

Examines selected works of Canadian literature in a variety of genres, organized by cultural movements, critical issues, theoretical approaches, or historical periods. May include works in various media, and explore relations among Canadian, Quebec, American, British, World literatures.

**ENGL 842-4 Studies in British Literature**

Examines selected works of British literature in a variety of genres, organized by cultural movements, critical issues, or theoretical approaches. May include works in various media. The historical and geographical focus of the course will vary.

**ENGL 843-4 Studies in Colonial, National, and Diasporic Literatures**

Examines selected colonial, national, and diasporic literatures in a variety of genres, organized by cultural movements, critical issues, or theoretical approaches. May include works in various media. The historical and geographical focus of the course will vary.

**ENGL 844-4 Studies in Aboriginal Literature**

Examines selected Aboriginal writings in a variety of forms and contexts, organized by cultural movements, critical issues, or theoretical approaches. May include works in various media, and explore relations between Aboriginal and relevant national literatures. The historical and regional focus of the course will vary.

**ENGL 850-4 Studies in Globalization, Literature, and Culture**

Examines the debates and interconnections among globalization, literature, and culture. May explore other media in relation to globalization. The course will vary according to theoretical and historical focus.

**ENGL 851-4 Studies in Popular Literature and Culture**

Investigates interconnections between literature and popular culture through a variety of texts. The course will vary according to theoretical and critical approach, selection of media, and geographical and historical focus.

**ENGL 852-4 Studies in Gender, Sexuality, and Literature**

Investigates intersections among gender, sexuality, and literature in a variety of writings and cultural contexts. The course will vary according to theoretical and critical approach, selection of media, and geographical and historical focus.

**ENGL 853-4 Studies in Postcolonial Literature**

Examines postcolonial theories and literatures in a variety of genres. The course will vary according to critical approach, selection of media, and geographical and historical focus.

**ENGL 854-4 Studies in Poetics**

Examines theories of poetic production and issues related to the history and distribution of poetry through literary communities. May emphasize active practice alongside theories of poetic production, and may also draw upon the resources of the SFU Library's Contemporary Literature Collection. The historical and geographical focus of the course will vary.

**ENGL 860-4 Studies in Writing and Rhetoric**

Focuses on the study and application of rhetorical theories. May include theories and topics in writing and composition.

**ENGL 870-874-4 Topics in Language and Literature**

Specific topics will vary from offering to offering.

**ENGL 875-4 Directed Studies****ENGL 880-4 Pro-seminar I**

A professional seminar that provides students with a grounding in pedagogy and introduces professional aspects of English studies. Course will be graded Satisfactory/Unsatisfactory.

**ENGL 881-4 Pro-seminar II**

A professional seminar that provides students with a grounding in pedagogy and introduces professional aspects of English studies. Course will be graded Satisfactory/Unsatisfactory.

**ENGL 890-4 MA Thesis****ENGL 891-4 MA Paper/Project****ENGL 892-4 PhD Field Exam One****ENGL 893-4 PhD Field Exam Two****ENGL 899-6 PhD Thesis****English Bridge Program EBP  
EBP XX1-0 English Bridge Program****Environmental Science EVSC  
Faculty of Environment****EVSC 200-3 Introduction to Environmental Science**

Introduction to the multi-disciplinary subject of environmental science. The course is presented in two parts. Basic concepts and application of the scientific method to problems in environmental science are presented in part I. Case studies which highlight the basic concepts covered in part I are presented in part II. Students with credit for ENPL 200 may not take EVSC 200 for further credit. Recommended: REM 100 Breadth-Science.

**EVSC 380-3 Practicum I**

First term of work experience in the Environmental Science Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: acceptance in the science co-operative education program.

**EVSC 381-3 Practicum II**

Second term of work experience in the Environmental Science Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: EVSC 380 and re-admission to the science co-operative education program.

**EVSC 401-1 Current Topics in Environmental Science**

This seminar course will expose students to a variety of speakers who will discuss a wide range of topics in environmental science. This course is required by all students wishing to graduate with a major in Environmental Science. Prerequisite: declared major in environmental science; completed third year course requirements of environmental science major.

**EVSC 480-3 Practicum III**

Third term of work experience in the Environmental Science Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: EVSC 381 and readmission to the science co-operative education program.

**EVSC 481-3 Practicum IV**

Fourth term of work experience in the Environmental Science Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: EVSC 480 and re-admission to the science co-operative education program.

**EVSC 482-3 Practicum V**

Optional fifth term of work experience in the Environmental Science Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: EVSC 481 and readmission to the science co-operative education program.

**EVSC 491W-3 Advanced Field Studies in Environmental Science**

Apply the theories and methods of environmental science to evaluate quantitatively the environmental impact of an industry on a selected site. The site can vary from year to year. This laboratory course brings together students from all streams of the Environmental Science Program, and the field work will be conducted by small groups of students. Prerequisite: standing in the environmental science program, with at least 30 upper division units, or with permission of the program director. Writing.

## Explorations EXPL Faculty of Arts and Social Sciences

### EXPL 110-3 Organizing Society

An interdisciplinary introduction to the analysis of social organization, with specific attention to identity, institutions, and environment. Enrolment restricted to students accepted into the Explorations program. Breadth-Social Sciences.

### EXPL 120-3 Experiencing Society

An interdisciplinary approach to creative and cultural forms of expression that reflect on an individual's perception of social experience. Enrolment restricted to students accepted into the Explorations program. Breadth-Humanities.

### EXPL 130-3 Global Development: Issues and Patterns

An interdisciplinary survey of issues and patterns in development across the globe since European industrialization. Enrolment restricted to students accepted into the Explorations program. Breadth-Social Sciences.

### EXPL 140-3 Global Identities

A study of migration, culture and identity through thematic or historical topics, selected case studies, and interdisciplinary scholarship in the Arts. Enrolment restricted to students accepted into the Explorations program.

### EXPL 145-3 Selected Topic

An interdisciplinary study of a selected topic in the arts and/or social sciences. Prerequisite: enrolment is restricted to students who are accepted into the Explorations program.

### EXPL 150-3 Introduction to Research Approaches in the Social Sciences

An interdisciplinary examination of the nature and processes of social research, with a focus on research conducted in the local community. Enrolment restricted to students accepted into the Explorations program. Breadth-Social Sciences.

### EXPL 160-3 Introduction to Research and Interpretation in the Arts

An interdisciplinary introduction to research and interpretation in Arts based scholarship. Enrolment restricted to students accepted into the Explorations Program. Breadth-Humanities.

### EXPL 310-3 Selected Topic I

Provides an in-depth, interdisciplinary investigation of a selected thematic, theoretical, historical, or contemporary topic, primarily from social science perspectives. Topics, research approaches, assignments, and projects will vary from term to term. Prerequisite: 30 units in the Faculty of Arts and social sciences including EXPL 150, 160 and a minimum six units at the 200 division; or 45 units in the Faculty of Arts and Social Sciences.

### EXPL 320-3 Selected Topic II

Provides an in-depth, interdisciplinary investigation of a selected thematic, theoretical, historical, or contemporary topic primarily from Arts perspectives. Topics, research approaches, assignments, and projects will vary from term to term. Prerequisite: 30 units in the Faculty of Arts and Social Sciences including EXPL 150, 160 and a minimum of six units at the 200 division; or 45 units in the Faculty of Arts and Social Sciences.

## First Nations Studies FNST Faculty of Arts and Social Sciences

### FNST 101-3 The Cultures, Languages and Origins of Canada's First Peoples

An introduction to the nature and goals of First Nations studies as an academic discipline; survey of prehistory, traditional cultures and aboriginal languages of Canada's First Nations. Breadth-Humanities/Social Sciences

### FNST 201-3 Canadian Aboriginal Peoples' Perspectives on History

An examination of fact and ideology in history and historic events involving contact between native and European peoples. The course will also address questions of research methodologies in studying Native/European relations, such as the evaluation of oral history and written ethnohistoric sources. An additional focus will be on gender as it influences perspectives. Breadth-Social Sci.

### FNST 301-3 Issues in Applied First Nations Studies Research

Involves a survey and examination of method, theory and related topics associated with contemporary First Nations Studies research in applied contexts. Ethical conduct and protocols for working within First Nations communities are reviewed. Prerequisite: FNST 101 or 201 or by permission of the department.

### FNST 322-3 Special Topics in First Nations Studies

Prerequisite: will vary according to the topic.

### FNST 325-4 History of Aboriginal Peoples of North America to 1850

Examines selected themes in the history of Aboriginal peoples of North America from first contact with Europeans to the mid-nineteenth century. Prerequisite: 45 units including FNST 101 or 201. FNST 325 and HIST 325 are identical and students may not take both courses for credit.

### FNST 326-4 History of Aboriginal Peoples of North America Since 1850

Examines selected themes in the history of Aboriginal peoples of North America in the nineteenth and twentieth centuries. Prerequisite: 45 units including FNST 101 or 201. FNST 326 and HIST 326 are identical and students may not take both courses for credit.

### FNST 327-4 Aboriginal Women in Canada

Themes and issues relating to the historical and contemporary experiences of aboriginal women in Canada: indigenous theories of gender; evolution and political function of stereotypes of indigenous women in Canada; history of Canadian legislation regulating indigenous identity; relevance of feminist analysis; and history of activism. Prerequisite: 45 units. Students who have taken FNST 322 under this topic may not take this course for further credit. FNST 327 and WS 327 are identical and students may not take both courses for credit.

### FNST 329-3 Sexuality and Gender: Indigenous Perspectives

Examines written works on sexuality and gender including the history of representations of the sexualized savage; the discussion of indigenous concepts of gender, including discussions of two-spirit versus gay identity; homophobia and sexual violence as tools of colonization; the emancipatory potential of erotica. Prerequisite: 45 units. Students who have taken FNST 322 may not take this course for further credit.

### FNST 332-3 Ethnobotany of British Columbia First Nations

This course is an introduction to the study of plant knowledge and use by First Nations peoples in British Columbia. It provides students with information about

the role of plants in First Nations' cultures including such areas as foods, medicines, technology, ceremony, ecological indicators, and within First Nations' knowledge and classification systems. Special focus may be placed on the ethnobotany of one or more Aboriginal groups or culture areas. Prerequisite: FNST 101 or by permission of the department.

### FNST 360-4 Popular Writing by Indigenous Authors

Examines works of popular fiction by indigenous authors and their use of specific genres (e.g. the mystery novel, vampire thriller, sci fi, comic book). Prerequisite: 45 units. Students who have taken FNST 322 under this topic may not take this course for further credit. ENGL 360 and FNST 360 are identical and students may not take both courses for credit.

### FNST 363-5 Indigenous Poetry, Poetics, Printmaking

Examines various art forms and aesthetic expressions of select indigenous peoples of the Americas including aboriginal poetry and poetic forms. A research and creation studio course. Prerequisite: 45 units; no previous artistic training and/or experience are required. Students who have taken this course under FNST 322 under the topic 'Poetics/Poetry: Bookmaking' or 'Indigenous Expressive Arts' may not take this course for further credit.

### FNST 383-5 Indigenous Technology: Art and Sustainability

Examines various art forms and aesthetic expressions of select indigenous peoples of the Americas. Reviews techniques and protocols for the gathering and preparation of materials and the use of ethnographic materials, and provides learning through hands-on practice. Prerequisite: 45 units and permission of instructor; no previous artistic training and/or experience is required. Students who have taken this course as FNST 322 under the topic 'Indigenous Expressive Arts' with a focus in crafts may not take this course for further credit.

### FNST 401-3 Aboriginal Rights and Government Relations

An examination of First Nations and aboriginal peoples' perspectives on political, social and legal issues involving their rights as first citizens of Canada and North America, and the practical and political relations with various levels of government. Issues examined include: aboriginal rights and title questions, self government models and concepts, constitutional matters, the impact of federal government policies, including their impact on women's lives, and native community and First Nations politics. Prerequisite: FNST 101 and 201. Recommended: POL 221.

### FNST 402-3 The Discourse of Native Peoples

Style and content of aboriginal people's discourse about their culture, world view, history and matters affecting their lives. Includes the analysis of selections from native oral literature, autobiography, expository writing, modern poetry and fiction. Prerequisite: FNST 101 and 201.

### FNST 403-3 Indigenous Knowledge in the Modern World

This course explores the subject of traditional indigenous knowledge and its contemporary implications for First Nations programs in such areas as economic development, ecotourism, spiritualism, language retention, biodiversity, ethnoscience, environmentalism, and heritage conservation. First Nations perspectives on patents, copyrights, and other creative products from traditional culture will also be examined through lecture, guest speakers and seminar presentation. Prerequisite: FNST 201 or by permission of the department.

**FNST 419-3 Aboriginal/Indigenous Justice**

An in-depth examination of Aboriginal/indigenous conceptions of justice in dealing with crime and other trouble in indigenous communities, and in relations among peoples. Prerequisite: FNST 101 or 201, or CRIM 101, or permission of the instructor. Students who took this course as CRIM 416 or 418 may not take this course for further credit. FNST 419 and CRIM 419 are identical and students cannot take both courses for credit.

**FNST 429-3 Indigenous Peoples and International Law**

An examination of how relations between Indigenous and non-Indigenous peoples framed and were framed by the development of international law from the 15th century onward. Prerequisite: FNST 101 or 201, or CRIM 101, or permission of instructor. Students who have taken this course under CRIM 416-3 or 418-3 under the title "Indigenous Peoples and International Law" or "Indigenous Peoples and Evolving International Relations" may not take this course for further credit. FNST 429 and CRIM 429 are identical and students may not take both courses for credit.

**FNST 433-5 Indigenous Environmental Activism**

Examines contemporary writings regarding indigenous environmental logic and environmental concerns of contemporary times. Studies effects of resource extraction upon indigenous nations, globalization, genetic modifications, health, intellectual property, spiritual beliefs, culture and society, art and language and compares these with specific indigenous logic at the time of contact. Prerequisite: 45 units; no previous artistic training and/or experience is required. Students who have taken this course as FNST 322 under the topic 'Poetics/Poetry: Bookmaking' or 'Indigenous Expressive Arts' with a focus in environmental activism may not take this course for further credit.

**FNST 442-3 Directed Readings in First Nations Studies**

Directed readings for upper level students in First Nations Studies who wish to study selected topics in depth. Prerequisite: nine units in First Nations Studies. Corequisite: permission of an instructor and program chair.

## Foundations of Academic Literacy FAL Faculty of Education

**FAL X99-4 Foundations of Academic Literacy**

An introduction to the kinds of reading and writing students will encounter in lower-division courses across the university disciplines. Important aspects of the writing process are discussed and illustrated in class, and students receive individual feedback on their academic writing. Students who wish to use the course to meet the language proficiency prerequisite of a writing-intensive course must obtain a C or better. Enrolment priority is given to undergraduate students who have not yet met the language proficiency prerequisite of a writing-intensive course. Students who receive less than a C grade on their first attempt at the course may re-enroll. No student may attempt the course more than twice. Units from this course do not count toward the units required for an SFU degree; however, the course grade is included in calculation of the student's cumulative GPA.

## Foundations of Analytical and Quantitative Reasoning FAN Department of Mathematics

**FAN X99-4 Foundations of Analytical and Quantitative Reasoning**

Designed for students who need to upgrade their mathematical background in preparation for SFU Q courses. Also recommended for students who wish to refresh skills after several years away from mathematics. An in-depth look at what mathematics is; mathematical reasoning, problem solving and math study skills. Review of fundamental topics and concepts of mathematics and their real-world applications. This course aims to develop students' math study skills, confidence in their quantitative abilities, and to learn how understanding mathematics is both one of the keys to mastering other disciplines, and useful in everyday situations. Units from this course do not count towards the 120 units required for an SFU degree; however, the course grade is included in the calculation of the student's cumulative GPA. Prerequisite: students who have taken, have received transfer credit for, or are currently taking MATH 150, 151, 154 or 157 may not take FAN X99 for credit without the permission from the Department of Mathematics.

## French FREN Faculty of Arts and Social Sciences

**FREN 120-3 French for Beginners**

An introduction to basic vocabulary, grammatical structures, and speech patterns. Emphasis on oral expression and listening comprehension. Instruction in class and in lab. Prerequisite: never studied or experienced French before. Students with credit for FREN 099 may not take this course for further credit.

**FREN 121-3 Introductory French I**

A comprehensive introduction to basic grammatical structures, vocabulary and pronunciation. Emphasis on oral communication skills. Instruction in class and in lab. Prerequisite: FREN 099 or 120 or less than grade 11 French (or equivalent based on placement test). Students with credit for FREN 100 may not take this course for further credit.

**FREN 122-3 Introductory French II**

Continuation of FREN 121. Designed to improve speaking and writing abilities by introducing more complex structures and vocabulary. Instruction in class and in lab. Prerequisite: FREN 100 or 121 or grade 11 French (or equivalent based on placement test). Students with credit for FREN 101 may not take this course for further credit.

**FREN 185-3 Practicum I**

First term of work experience in the French Co-operative Education program. Students should apply to the Faculty of Arts and Social Sciences Co-op Education co-ordinator two terms in advance. Units from this course do not count towards the units required for an SFU degree. Prerequisite: a minimum of 30 units including French courses to the level of FREN 215 (or equivalent placement) and a minimum CGPA of 2.75.

**FREN 198-3 French for Reading Knowledge I**

For students with little or no background in French who wish to acquire the ability to read periodicals, journals and basic literary and academic texts. May not be taken by students with French 12 or with FREN 151 (or 210) or higher (or their equivalents).

**FREN 210-3 Intermediate French I**

Designed to consolidate and expand knowledge of the language. Strong emphasis on oral expression and listening comprehension to develop communicative skills. Instruction in class and in lab.

Prerequisite: FREN 101 or 122 or grade 12 French (or equivalent based on placement test). May not be taken by students from French immersion, programme cadre or IB students. Students with credit for FREN 151 may not take this course for further credit.

**FREN 211-3 Intermediate French II**

Designed to improve listening and reading comprehension. Emphasis on accuracy in oral and written communication. Instruction in class and in lab. Prerequisite: grade 12 French with a grade of A or FREN 151 or 210 (or equivalent based on placement test). May not be taken by FREN 212 or 216 students. Students with credit for FREN 201 may not take this course for further credit.

**FREN 212-3 French for Immersion Program Students**

Designed for French immersion program students who wish to refine their oral and written language competence. Instruction in class and in lab. Prerequisite: for French immersion program students or those who have studied in a Francophone milieu. Placement test required. Students with credit for FREN 201 or 211 or 216 may not take this course for further credit.

**FREN 215-3 Intermediate French: Oral Practice**

Designed to develop listening comprehension and oral expression. Instruction in class and in lab. Prerequisite: FREN 201 or 211. May be taken concurrently with FREN 212. Students with credit for FREN 205, 300 or 330 may not take this course for further credit.

**FREN 217-3 French Pronunciation**

Designed to improve pronunciation. Instruction in class and in lab. Prerequisite: FREN 201 or 211. May be taken concurrently with FREN 212. Students with credit for FREN 312 may not take this course for further credit.

**FREN 221-3 French Writing I**

A reading and writing course with emphasis on vocabulary and logical structure in written expression. Instruction in class, in lab and online. Prerequisite: FREN 201 or 211, or FREN 212 or 216, or with a grade of A, FREN 151 or 210. In the latter case, FREN 211 and 221 may be taken concurrently. Students with credit for FREN 202 may not take this course for further credit.

**FREN 222-3 French Writing II**

Focusing on grammar and grammatical analysis, and the process of writing. Instruction in class, in lab and online. Prerequisite: FREN 202 or 221, or, with a grade of A, FREN 201 or 211, or, with a grade of A, FREN 212 or 216. Students with credit for FREN 206 may not take this course for further credit.

**FREN 225-3 Topics in French Language**

The topic will vary: French for Business, French for Professional Purposes, Practice in Translation, or French and the Media. Prerequisite: FREN 206 or 222 (or equivalent based on placement test). Students with credit for FREN 220 may not take this course for further credit.

**FREN 230-3 Introduction to French-Canadian Literature**

This will serve to introduce the student to French Canadian thought through literature and the arts. The course will be conducted in French. Prerequisite: any one of FREN 206, 222, 299 or 301. Breadth-Humanities.

**FREN 240-3 Introduction to French Literature: Modern French Literature**

This will serve to introduce the student to French contemporary thought through literature. This course will be conducted in French; the object is to acquire a reading facility and a critical appreciation of modern French literature. Prerequisite: any one of FREN 206, 222, 299 or 301. Breadth-Humanities.

**FREN 270-3 Introduction to French Linguistics I**

An introduction to the phonetics of French and to the linguistic concepts upon which phonological and morphological descriptions of French are based. Prerequisite: FREN 206 or 222, or FREN 301. Quantitative.

**FREN 285-3 Practicum II**

Second term of work experience in the French Co-operative Education program. Students should apply to the Faculty of Arts and Social Sciences Co-op Education co-ordinator two terms in advance. Units from this course do not count towards the units required for an SFU degree. Prerequisite: a minimum of 45 units including French courses to the level of FREN 215 (or equivalent placement), successful completion of FREN 185, and a minimum CGPA of 2.75.

**FREN 300-3 Advanced French: Oral Practice**

Designed to develop ability in oral expression. Instruction in class and in lab. Prerequisite: FREN 206 or 222 or, with a grade of A and permission of instructor, FREN 205 or 215.

**FREN 301W-3 Advanced French Composition**

A writing course to improve organization and argumentation, paragraph structures and lexical accuracy. Instruction in class and online. Prerequisite: FREN 206 or 222, or, with a grade of A, FREN 202 or 221. Writing.

**FREN 304-3 Advanced French Grammar**

Continuation of FREN 222, with emphasis on grammatical analysis. Instruction in class and online. Prerequisite: FREN 206 or 222 (or equivalent based on placement test). Students with credit for FREN 302 may not take this course for further credit.

**FREN 307-3 French Vocabulary**

Designed to expand vocabulary and optimize the use of dictionaries and electronic language resources. Instruction in class and in lab. Prerequisite: FREN 206 or 222. Students with credit for FREN 311 may not take this course for further credit.

**FREN 320-3 Field School: Special Topics in French I**

Selected studies in French language, linguistics, literature or civilization. Prerequisite: FREN 206 or 222, and FREN 230 or 240, and 270. May be taken only by field school participants. Corequisite: FREN 321, 322.

**FREN 321-3 Field School: Special Topics in French II**

Selected studies in French language, linguistics, literature or civilization. Prerequisite: FREN 206 or 222, and FREN 230 or 240, and FREN 270. May be taken only by field school participants. Corequisite: FREN 320, 322.

**FREN 322-3 Field School: Special Topics in French III**

Selected studies in French language, linguistics, literature or civilization. Prerequisite: FREN 206 or 222, and FREN 230 or 240, and FREN 270. May be taken only by field school participants. Corequisite: FREN 320, 321.

**FREN 330-3 Francophone World**

A multidisciplinary analysis of socio-cultural aspects of French speaking countries, involving written word and oral participation. Prerequisite: FREN 206 or 222 or permission of instructor. Breadth-Humanities.

**FREN 342-4 Literature in Translation from the Francophone World**

A study of representative and significant works (from one or more French speaking countries) from literature and cinema originally produced in French in their socio-cultural context. Prerequisite: knowledge of French is not required; two courses in literature. This course does not count towards the degree

requirements for an extended minor, major or honors in French. With permission of the Department of English, may count towards the requirements of an English major or honors.

**FREN 360-3 Intermediate French Literature**

Introduction to critical analysis based on the study of texts from the Middle Ages to the 19th century. Prerequisite: FREN 230 or 240.

**FREN 370-3 Introduction to French Linguistics II**

An introduction to the fundamental concepts and techniques used in the linguistic analysis of the morphosyntax, lexicology and semantics of French. Prerequisite: FREN 270. Quantitative.

**FREN 385-3 Practicum III**

Third term of work experience in the French Co-operative Education program. Students should apply to the Faculty of Arts and Social Sciences Co-op Education co-ordinator two terms in advance. Units from this course do not count towards the units required for an SFU degree. Prerequisite: a minimum of 60 units including French courses to the level of FREN 222 (or equivalent placement), successful completion of FREN 285, and a minimum CGPA of 2.75.

**FREN 410-3 French Stylistics**

Introduction to the application of linguistic concepts, pragmatics, discourse analysis, translation theory to the study of a variety of French texts. Prerequisite: all of FREN 301, 360 and 370. Students with credit for FREN 406 may not take this course for further credit.

**FREN 411-3 Aspects of French Morphology**

Analysis of selected topics of the morphological system of modern French. Prerequisite: FREN 301 and 370.

**FREN 412-3 Aspects of French Syntax**

Analysis of selected grammatical problems in French syntax. Prerequisite: FREN 301 and 370.

**FREN 413-3 Aspects of French Phonetics and Phonology**

Analysis of selected topics of the sound system of modern French. Prerequisite: FREN 301 and 370.

**FREN 415-3 Aspects of French Semantics and Lexicology**

Study of diachronic and synchronic organization of semantic and lexical fields. Formation and evolution of French vocabulary. Prerequisite: FREN 301 and 370. Students with credit for FREN 420 may not take this course for further credit.

**FREN 416-3 French Applied Linguistics**

This course studies the applications of various branches of linguistics to the problem of second language acquisition and the teaching of French as a second language. Prerequisite: FREN 301 and 370. Students with credit for FREN 310 may not take this course for further credit.

**FREN 423-3 Topics in the History of French**

Studies of selected topics in French historical linguistics. Subject matter may include external history, history of sound changes, morphological and syntactic changes. Prerequisite: FREN 301 and 370. Students with credit for FREN 407 and/or 408 may not take this course for further credit.

**FREN 424-3 Topics in French Linguistics**

The subject matter will vary according to faculty and student interests. Selected aspects of French linguistic theories as they apply to the study, teaching and/or learning of French. Prerequisite: FREN 301 and 370. Students with credit for FREN 414 may not take this course for further credit.

**FREN 425-3 Topics in the Varieties of French**

Study of selected topics in French dialectal variation. Subject matter may include, but is not limited to, French Dialects, Canadian French and French Creoles. Prerequisite: FREN 301 and 370. Students

with credit for FREN 421 and/or 422 may not take this course for further credit.

**FREN 430-3 Topics in French-Canadian Literature**

Prerequisite: FREN 301 and 360.

**FREN 452-3 Topics in French Culture**

Study of selected topics relating to French cultures. Topics may include, but are not limited to, French culture in British Columbia, Studies in Bilingualism, Sociolinguistics of French. Prerequisites: FREN 301, FREN 230 or FREN 240, and FREN 270

**FREN 461-3 French Medieval Literature**

Medieval French literature with special emphasis on a genre, on an author, or on a region. Prerequisite: FREN 301 and 360.

**FREN 462-3 French Renaissance Literature**

A study of French Renaissance works and literary genres in their historical and cultural contexts. Prerequisite: FREN 301 and 360.

**FREN 463-3 Literature of the Seventeenth Century**

Prerequisite: FREN 301 and 360.

**FREN 465-3 Literature of the Eighteenth Century**

Prerequisite: FREN 301 and 360.

**FREN 467-3 Romanticism**

Prerequisite: FREN 301 and 360.

**FREN 470-3 Realism to Naturalism**

Prerequisite: FREN 301 and 360.

**FREN 472-3 The Contemporary Theatre**

Prerequisite: FREN 301 and 360.

**FREN 474-3 French Poetry**

Prerequisite: FREN 301 and 360.

**FREN 475-3 The Contemporary Novel**

Prerequisite: FREN 301 and 360.

**FREN 476-3 Interdisciplinary Approaches in French Literature**

A study of French and francophone literature from an interdisciplinary point of view. Topics will vary to include different disciplines: history, cultural studies, gender studies, psychology or the study of the relationships between literature and other media, i.e. cinema. Prerequisite: FREN 301 and 360.

**FREN 480-2 Seminar I**

Study in depth of an area covered by a French literature or linguistics course in the 400 division. Prerequisite: FREN 230 or 240, and FREN 360; or FREN 301 and FREN 306 or 370, or by permission of the course chair. To be taken in conjunction with a 400 division course in French linguistics or literature.

**FREN 485-3 Practicum IV**

Fourth term of work experience in the French Co-operative Education program. Students should apply to the Faculty of Arts and Social Sciences Co-op Education co-ordinator two terms in advance. Units from this course do not count towards the units required for an SFU degree. Prerequisite: a minimum of 75 units including French courses to the level of FREN 301 (or equivalent placement), successful completion of FREN 385, and a minimum CGPA of 2.75.

**FREN 491-3 Readings in French Linguistics and/or Literary Criticism**

Guided readings in selected topics. May only be taken during the last terms of study; required as a preparation for the honors essay but may be taken by other students with consent of the instructor.

**FREN 492-3 Honors Essay**

Candidates for honors will be required to submit a major paper on a topic of a comprehensive nature in literature or linguistics to be approved by the course chair. Prerequisite: FREN 491 and at least nine 400

division courses in French literature and/or French linguistics.

### **FREN 803-5 Research Methods in French Linguistics and/or French Literature**

The study of research methods and tools used in French linguistics and/or French literature. Planning a long term research project.

### **FREN 804-5 Topics in the Structure of French I**

Explores a selection of classic problems of the structure of French (phonology, morphology, syntax, lexicology or semantics) applying a variety of theoretical viewpoints, from a diachronic or synchronic perspective.

### **FREN 805-5 Topics in the Structure of French II**

Explores, from a variety of diachronic or synchronic theoretical viewpoints, a selection of classic problems of the structure of French not covered in FREN 804.

### **FREN 806-5 Topics in the Acquisition of French**

New trends and theoretical developments in the acquisition of French as a second language. Study of the contribution of linguistic theory to the teaching and learning of French.

### **FREN 810-5 Pragmatics and the Structure of French**

Explores a selection of themes in the pragmatics of French, for example paralinguistic features of French, phonostylistics, contrastive structures (French/English). A variety of practical applications may be envisaged: pedagogy, translation, stylistic analysis, etc.

### **FREN 811-5 Topics in the Varieties of French**

An in-depth study of one of the many varieties of French (in France and in the world) from linguistic and/or sociolinguistic viewpoints, i.e. popular French, Canadian French, French-based Creoles.

### **FREN 812-5 Approaches to the Linguistic Analysis of French**

Studies the contributions made by a selection of French language specialists to the evolution of various aspects of linguistic theory.

### **FREN 816-5 Sociolinguistic Approaches to French Studies**

Explores the relationship between language, society and identity in France and/or in the French-speaking world. The study, from an integrative point of view, of social markers in speech, conversational rules, objective versus subjective norms, attitudes towards language variation and their implications among French speakers. French bilingualism, language planning and the place of French in the world.

### **FREN 820-5 Types of Discourse**

A study of the language in use, discourse strategies, the enunciation devices of various types of texts, both traditional and non-traditional genres such as oral or para-literary texts.

### **FREN 821-5 Theories and Methods of Literary Analysis**

A study of a selection of significant works by contemporary French critics (Barthes, Genette, Kristeva). The application of their theories and models to the analysis of specific works. May concentrate on one area, e.g. narratology, semiotics, etc.

### **FREN 822-5 Socio-Cultural Approaches to French Literature**

Provides a framework for a detailed study of French literature within its socio-cultural context.

### **FREN 823-5 Interdisciplinary Approaches to French Literature**

Explores the relationships between French literature and other arts or applies concepts and models developed in other disciplines to the study of French literature.

### **FREN 824-5 Topics in French Canadian Literature**

An in-depth study of a theme or an aspect of French Canadian Literature through different literary works.

### **FREN 825-5 Topics in French Literature**

An in-depth study of a topic relating to a period or a movement in French literary history, such as: Middle Ages, Renaissance, Classical Period, Enlightenment, Romanticism, Realism, Naturalism, Existentialism.

### **FREN 826-5 Monographic Studies**

An in-depth study of one writer from a specific theoretical perspective (psychological, historical, linguistic).

### **FREN 897-6 MA Project**

### **FREN 898-6 MA Thesis**

### **FREN 999-6 Field Examination**

## **Gender Studies GDST Faculty of Arts and Social Sciences**

### **GDST 200-3 Thinking About Gender**

An introduction to the major critical debates on gender from an interdisciplinary and cross-cultural perspective. Topics include the construction and regulation of gender and the relation between gender and ideologies of sexuality, race, class and nation. Breadth-Humanities.

### **GDST 300-4 Mapping Masculinities**

Maps the field of masculinity studies and explores its intersections with feminist, postcolonial, queer, and critical race theories. Prerequisite: GDST 200.

### **GDST 301-4 Queer Genders**

Introduces students to current debates on gender identity and gender difference from the perspectives of queer subjects. Explores recent theoretical and cultural works on gender from queer, transgender, and feminist perspectives, while examining the challenges they pose to current understanding of sex, gender, sexuality, and the body. Prerequisite: GDST 200. Students who have taken WS 301 Special Topic: Theorizing Queer Genders may not take this course for further credit.

## **General Studies GS Faculty of Arts and Social Sciences**

### **GS 420-429 Selected Topics for Integrated Studies**

These selected topics are offered only through integrated studies programs within the Bachelor of General Studies degree. They explore fields of professional practice through interdisciplinary approaches not available in regular academic departments. Prerequisite: admission to an integrated studies program. Variable units 3, 4, 5.

## **Geography GEOG Faculty of Environment**

### **GEOG 100-3 Human Geography**

This course introduces the basic systematic approaches in the study of contemporary human geography including the distribution of population, spatial aspects of economic, cultural and political development, landscape and resource study. Breadth-Social Sciences.

### **GEOG 102-3 World Problems in Geographic Perspective**

Current world-scale problems are examined in their regional and global contexts, with emphasis being placed on the importance of dynamics of the natural environment in human affairs. Breadth-Social Sciences.

### **GEOG 111-3 Earth Systems**

An introduction to landforms, climates, soils and vegetation; their origins, distributions, interrelationships and roles in the ecosystem. Laboratory work and field trips are included. Breadth-Science.

### **GEOG 162-3 Canada**

The geographical character of Canada; the Canadian environment; regional differences in socio-economic growth. Breadth-Social Sciences.

### **GEOG 213-3 Introduction to Geomorphology**

An examination of landforms, processes, laws, and theories of development; types and distributions. Prerequisite: GEOG 111 or EASC 101.

### **GEOG 214-3 Climate and Environment**

A review of the basic principles and processes involved in physical and dynamic climatology, with particular emphasis on global distributions and change. Prerequisite: GEOG 111. Quantitative.

### **GEOG 215-3 Biogeography**

An examination of the abiotic and biotic factors that control the distribution and development of plant communities, including climatic and geological change. Prerequisite: GEOG 111. Students granted credit for GEOG 215 may not be granted credit for BISC 204.

### **GEOG 221-3 Economic Geography**

The basic concepts of economic geography, involving consideration of the spatial organization and development of economic and resource based systems. Prerequisite: GEOG 100.

### **GEOG 241-3 Social Geography**

Systematic consideration of the spatial and environmental bases of societies, in historical and cultural perspective. Prerequisite: GEOG 100.

### **GEOG 250-3 Cartography I**

An introduction to the interpretation of maps and air photographs. Prerequisite: GEOG 100 or 221 or 241; and 111.

### **GEOG 251-3 Quantitative Geography**

An introduction to basic quantitative methods and software for the solution of geographic problems. Topics include spatial data measurements, central tendency measures, simple probability theory and distributions, inferential methods, and correlation analysis. Prerequisite: GEOG 100 or 221 or 241; and 111. Quantitative.

### **GEOG 253-3 Aerial Photographic Interpretation**

Uses of aerial photography and air photo interpretation in geography. The course is divided into four sections: (1) technical background regarding aerial photography and photo interpretation; (2) air photo interpretation and mapping; (3) application of air photo interpretation; and (4) introduction to remote sensing. Prerequisite: GEOG 100 or 221 or 241; and 111. Quantitative.

### **GEOG 255-3 Geographical Information Science I**

A basic overview of Geographical Information Systems and Science; GIS software, hardware, data structures and models; spatial data, operations and algorithms; practical applications and limitations. Prerequisite: GEOG 100 or 111 or permission of instructor. Students with credit for GEOG 354 may not take this course for further credit. Quantitative.

### **GEOG 261-3 Introduction to Urban Geography**

This course will introduce basic concepts in the study of urban geography by systematically identifying and examining major components of urban structure. Prerequisite: GEOG 100 or 102 or 30 units. Breadth-Social Sciences.

### **GEOG 263-3 Selected Regions**

A study of the geographical character of a major world region. Prerequisite: at least nine units. This course



may not be counted more than once toward a degree. Breadth-Social Sciences.

#### **GEOG 264-3 Canadian Cities**

This course will provide a systematic introduction to urbanization in Canada. Topics addressed will include Canadian urbanization as compared with other nations, especially the United States, metropolitan centres, resource towns, and the internal structure of cities. Prerequisite: GEOG 100 or 162 or permission of instructor.

#### **GEOG 265-3 Geography of British Columbia**

An examination of the physical landscape, the migration process, resource exploitation and the development of the settlement patterns. Prerequisite: at least nine units.

#### **GEOG 300-4 Possible Worlds: The Rise of Geographical Thinking**

A survey of geographical thinking within the Western tradition, from the Greeks to modern times. This course looks at efforts, both mainstream and eccentric, to describe and explain the world (places, peoples, environments, Earth). Extensive use of primary texts. Prerequisite: completion of 45 units.

#### **GEOG 301-4 Geographic Ideas and Methodology**

A study of contemporary geographical concepts in historical perspective. The course will examine traditional approaches to the subject matter of geography, giving particular attention to present day methodological debate and foci of interest. Prerequisite: completion of 30 units, including 15 in geography.

#### **GEOG 302-3 Geography Practicum I**

This is the first term of work experience in a co-operative education program available to students who plan to pursue a career in geography or related areas. Credits from this course do not count towards the credits required for an SFU degree. Prerequisite: completion of the requirements for acceptance into the Science and Environment co-operative education program. Students in the BA program and the BSc program should apply to the Science and Environment co-operative education program. Applications are due by the end of the third week of the preceding term.

#### **GEOG 303-3 Geography Practicum II**

This is the second term of work experience in the Geography Co-operative Education Program. Credits from this course do not count towards the credits required for an SFU degree. Prerequisite: GEOG 302 and acceptance by the Science and Environment co-operative education program. Students should apply to a co-op co-ordinator in the Science and Environment co-op program by the end of the third week of the preceding term.

#### **GEOG 310-4 Physical Geography Field Course**

A twelve-day field camp with a focus on various measuring, surveying, recording and mapping skills in branches of physical geography. A selected project will be completed either by a team or by an individual. Field camp locations will vary from year to year. The camp will be held immediately following the end of final examinations in April. Prerequisite: GEOG 213 and one of GEOG 214 or 215. Pre- or Co-requisite: one of GEOG 311, 313, 314, 315, 316 or 317.

#### **GEOG 311-4 Hydrology**

Introduction to the hydrologic cycle, with an emphasis on the hydrology of British Columbia; description and analysis of the processes of water movement and storage; effects of climatic variations and land use on the hydrologic cycle. Prerequisite: GEOG 213 or 214; STAT 101 or 270 or 201 or GEOG 251; PHYS 100 or 101 or 120; or permission of the instructor. Quantitative.

#### **GEOG 312-4 Geography of Natural Hazards**

An introduction to the occurrence and origin of natural hazards such as volcanic eruptions, landslides, etc. Interaction between the relevant natural processes and society will be examined, as well as prediction of natural events and the amelioration of the effects of such events within different cultural contexts. Prerequisite: GEOG 111 or EASC 101. Students with credit for GEOG 212 may not take this course for further credit.

#### **GEOG 313-4 River Geomorphology**

Intermediate analysis in fluvial and coastal geomorphology with particular reference to British Columbia. Prerequisite: GEOG 213. Quantitative.

#### **GEOG 314-4 Weather and Climate**

An introduction to atmospheric science with emphasis on processes in the boundary layer; examination of the radiation, energy and water balances; description and analysis of heat and mass transfer. Prerequisite: GEOG 214 or permission of instructor. Recommended: MATH 151 and 152 or MATH 154 and 155 or MATH 157 and 158. Quantitative.

#### **GEOG 315-4 World Ecosystems**

Physical and biological characteristics of regional ecosystems; historical evolution of biomes, management of biotic resources. Prerequisite: GEOG 215 or BISC 204.

#### **GEOG 316-4 Ecosystem Biogeochemistry**

Introduction to the cycling of essential chemical elements through ecosystems. Interactions among biological, hydrological, and geological controls on the structure and function of ecosystems and the spatial-temporal scales of elemental cycling are emphasized. Environmental problems resulting from disturbance to natural equilibria in the elemental cycles are examined. Prerequisite: GEOG 215 or BISC 204 or permission of the instructor. Quantitative.

#### **GEOG 317-4 Soil Science**

An introduction to the study of soils: physical, chemical and biological properties of soils; soil formation, description, classification, survey and use. Field and laboratory techniques of soil analysis. Prerequisite: GEOG 111 and one of GEOG 213, 214, 215, CHEM 121.

#### **GEOG 322-4 World Resources**

An analysis of the use and development of natural resources from a geographic, economic and institutional perspective. Prerequisite: at least 30 units including GEOG 221.

#### **GEOG 322W-4 World Resources**

An analysis of the use and development of natural resources from a geographic, economic and institutional perspective. Prerequisite: at least 30 units including GEOG 221. Writing.

#### **GEOG 323-4 Industrial Location**

An examination of the factors affecting industrial location and the geographic organization of production systems within and among firms from the perspectives of national, regional and urban development. Prerequisite: GEOG 221.

#### **GEOG 324-4 Geography of Transportation**

An empirical and theoretical examination of the geographical aspects of transportation systems. Prerequisite: GEOG 221 and 241.

#### **GEOG 325-4 Geographies of Consumption**

Spaces, places, landscapes, and scales of consumption emphasizing commodity cultures, marketing, retail, ideology, subjectivity, objects, technology, and tourism. Prerequisite: GEOG 221 or 261.

#### **GEOG 327-4 Geography of Tourism**

Factors underlying the changing geography of tourism. Issues of demand, supply and impact are examined. Prerequisite: GEOG 221 or 241, or permission of the instructor.

#### **GEOG 351-4 Cartography and Visualization**

Elements of cartographic analysis, design and visualization, with an emphasis on digital mapping, animation techniques, cartographic software and internet mapping. Prerequisite: GEOG 255. Quantitative.

#### **GEOG 352-4 Spatial Analysis**

Advanced quantitative techniques for spatial analysis of geographic data and patterns. Topics include geostatistics, spatial interpolation, autocorrelation, kriging, and their use in geographic problem solving with spatial analysis software. Prerequisite: GEOG 251 or STAT 270 or 201. Quantitative.

#### **GEOG 353-4 Remote Sensing**

Applied remote sensing and image analysis. Topics include air photo interpretation, multispectral and color photography, thermal imagery, multispectral scanners, microwave applications, satellite imagery. The relation of remote sensing information and Geographic Information Systems is discussed. Digital interpretation and photogrammetric analysis will be emphasized. Prerequisite: GEOG 253. Quantitative.

#### **GEOG 355-4 Geographical Information Science II**

An examination of technical components of GIS. Topics include spatial representations, generalization and data management; computational algebra and set theory; digital surfaces and terrain models. Prerequisite: GEOG 255. Quantitative.

#### **GEOG 356-4 3D Geovisualization**

3D geovisualization methods, concepts and theory. Bridges conventional geographic visualization with emerging 3D methods. Emphasizes user-centered design and cognitive implications. Prerequisite: GEOG 253 or 255.

#### **GEOG 362-4 Geography of Urban Development**

This course will apply the principles of urban geographical analysis to the study of urbanization as exemplified in the development of cities in Europe and North America. Prerequisite: at least 30 units including either GEOG 241 or 261.

#### **GEOG 362W-4 Geography of Urban Development**

This course will apply the principles of urban geographical analysis to the study of urbanization as exemplified in the development of cities in Europe and North America. Prerequisite: at least 30 units including either GEOG 241 or 261. Writing.

#### **GEOG 363-4 Urban Planning and Policy**

An introduction to the major approaches and key ideas of the professions of urban governance; urban planning and urban policy. Through a focus on contemporary theory, process-based understanding, and specific issues and examples, the course examines key trends and interventions and promotes critical reflection on urban development. Prerequisite: 30 units, including one of GEOG 241 or 261.

#### **GEOG 377-4 Environmental History**

Examines the reciprocal influences between humans and nature through time. Topics may include settlement, agriculture, technology, politics, urbanization, science, and conservation. Prerequisite: 45 units with nine of lower division Geography units. This course is identical to HIST 377 and students cannot take both courses for credit.

#### **GEOG 381-4 Political Geography**

Theoretical approaches to problems of the interactions of political decisions and power structures with territorial organization. Prerequisite: GEOG 241.

#### **GEOG 381W-4 Political Geography**

Theoretical approaches to problems of the interactions of political decisions and power

structures with territorial organization. Prerequisite: GEOG 241. Writing.

#### **GEOG 382-4 Population Geography**

A survey — from geographic perspective — of data, concepts, themes, and debates in the study of population. Particular concern for population numbers, fertility, mortality, and migration over space and time. Prerequisite: GEOG 221 or 241.

#### **GEOG 383-4 Regional Development and Planning I**

Theories and concepts of regional development and planning in the advanced capitalist and third worlds; methods of spatial analysis. Prerequisite: GEOG 221 and 241.

#### **GEOG 385-4 Agriculture and the Environment**

An examination of the relationship between agricultural production systems and the biophysical environment, with emphasis on the origins of, and potential solutions to, agri-environmental degradation. Prerequisite: GEOG 221.

#### **GEOG 386-4 Geography, Health and Health Care**

An introduction to the study of health and health care issues from a geographic perspective covering: major spatial influences shaping the health status of populations, the distribution of disease, and the delivery of health care services. Prerequisite: GEOG 241 or GERO 300 or SA 218.

#### **GEOG 387-4 Geography and Gender**

Geographical perspectives on gender and sexuality. This course investigates feminist theory in geography and its analysis of home, city, nation, state, global economy, colonialism, and migration. Prerequisite: GEOG 241.

#### **GEOG 389W-4 Nature and Society**

Examines the relationship between nature and society, covering the dominant geographical approaches to human-environment interaction, and their social, spatial, and political economic effects. Prerequisite: GEOG 221 or EVSC 200 (formerly ENPL 200). Writing.

#### **GEOG 391-4 Qualitative Research Methods**

Research design process and qualitative research methods for human geographers with emphasis on case study and survey-based research. Provides the rationale, tools, and skills students need to design, conduct and analyze qualitative research. Prerequisite: One of GEOG 221 or 241 and 8 units of upper division geography courses.

#### **GEOG 402-3 Geography Practicum III**

This is the third term of work experience in the Geography Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: GEOG 303 and acceptance by the Science and Environment co-operative education program. Students should apply to a co-op co-ordinator in the Science and Environment co-op program by the end of the third week of the preceding term.

#### **GEOG 403-3 Geography Practicum IV**

This is the last term of work experience in the Geography Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: GEOG 402 and acceptance by the Science and Environment co-operative education program. Students should apply to a co-op co-ordinator in the Science and Environment co-op program by the end of the third week of the preceding term.

#### **GEOG 404-2 Directed Readings**

Designed for upper level geography major and honors students who wish to continue research started in conjunction with an earlier course. Prerequisite: permission to enter directed readings courses requires written consent of both the faculty member

willing to supervise the research, and the chair of the department.

#### **GEOG 405-4 Directed Readings**

Designed for upper level geography major and honors students who wish to continue research started in conjunction with an earlier course. Prerequisite: permission to enter directed readings courses requires written consent of both the faculty member willing to supervise the research, and the chair of the department.

#### **GEOG 409-3 Geography Practicum V**

This is an optional term of work experience in the Geography Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: GEOG 403 and acceptance by the Science and Environment co-operative education program. Students should apply to a co-op co-ordinator in the Science and Environment co-op program by the end of the third week of the preceding term.

#### **GEOG 411-4 Advanced Hydrology**

An examination of hydrologic processes via experimental and observational studies; measurement and analysis of hydrologic data; application of hydrologic models; recent research developments in selected sub-fields of hydrology. Prerequisite: one of GEOG 311, 313, or 314; one of GEOG 251, STAT 101, 102 or 203 (formerly 103). Quantitative.

#### **GEOG 412-4 Glacial Processes and Environments**

An examination of glacial processes and environments emphasizing landscapes and sediments resulting from the movement of ice, water, and sediment; application of field techniques. Prerequisite: GEOG 313; EASC 201 recommended.

#### **GEOG 412W-4 Glacial Processes and Environments**

An examination of glacial processes and environments emphasizing landscapes and sediments resulting from the movement of ice, water, and sediment; application of field techniques. Prerequisite: GEOG 313; EASC 201 recommended. Writing.

#### **GEOG 413-4 Advanced River Geomorphology**

Advanced treatment of topics in glacial and fluvial geomorphology with emphasis on current research problems. Prerequisite: GEOG 313.

#### **GEOG 414-4 Advanced Climatology**

An examination of recent advances in climatology and application of atmospheric process models. Prerequisite: GEOG 314. Quantitative.

#### **GEOG 415-4 Advanced Biogeography**

A survey of advanced biogeographic theory, and techniques of vegetation analysis. The application of these theories and techniques to biotic resources management is also examined. Prerequisite: GEOG 315.

#### **GEOG 416W-4 Pleistocene Geography**

An examination of the physical geomorphic, pedologic and biotic processes and evidence from human geography of the period will be studied as they affect landscape changes. Prerequisite: one of GEOG 213, 214, 215, 317. Writing.

#### **GEOG 417-4 Advanced Soil Science**

Advanced treatment of topics in soil science: soil physics, soil chemistry, soil biology, soil classification and/or forest soils. Prerequisite: GEOG 317.

#### **GEOG 417W-4 Advanced Soil Science**

Advanced treatment of topics in soil science: soil physics, soil chemistry, soil biology, soil classification and/or forest soils. Prerequisite: GEOG 317. Writing.

#### **GEOG 420-4 Cultural Geography**

A critical study of selected cultural landscapes, practices and meanings in light of recent theoretical

developments in geography. Prerequisite: GEOG 325 or 381 or 387.

#### **GEOG 422-4 Theories and Practices of Development**

A geographic study of 'development' and 'underdevelopment' with particular references to selected lesser developed regions. Prerequisite: at least 60 units including GEOG 111, 221, and 241. This course is identical to LAS 422 and students cannot take both courses for credit.

#### **GEOG 426-4 Industrial Change and Local Development**

Relationships between multinational corporations and local development with reference to resource based towns in British Columbia. An analysis of the implications of changes in employment, organization, technology and resource utilization for community economic development. Prerequisite: at least 60 units including GEOG 323 or 383.

#### **GEOG 427-4 Selected Topics in the Geography of Tourism**

Selected topics in the geography of tourism. Topics emphasize policy, planning and management issues associated with tourism. Prerequisite: GEOG 327, or permission of the instructor.

#### **GEOG 428-4 World Forests**

Comparative analysis of forest industries, ecosystems and policies, and their lessons for forest management in British Columbia. Topics include tropical deforestation and carbon sequestration, the wilderness debate, and forests in culture and the visual arts. Prerequisite: GEOG 315, or 322, or 389.

#### **GEOG 429-4 Environment and Inequality**

Examination of the particular challenges associated with production in nature; of the geography of environmental 'goods' and 'bads' across different social and biophysical landscapes; and of the environmental conflicts that frequently arise. Prerequisite: GEOG 322 or 389.

#### **GEOG 432-4 Problems in Environmental History**

An investigation into the major themes and arguments in the environmental histories of North America, emphasizing how different individuals and groups have used, perceived, and managed their environments over time. Prerequisite: 60 units including eight of upper division geography. This course is identical to HIST 432 and students cannot take both courses for credit. Students with credit for HIST 485 in 2001-3 cannot take this course for further credit.

#### **GEOG 440-4 Law and Geography**

An examination of the emergent field of law and geography. Topics will include the legal-geographic dimensions of property; the regulation of public space; rights; nature; colonial dispossession; and globalization and the law. Prerequisite: GEOG 381.

#### **GEOG 440W-4 Law and Geography**

An examination of the emergent field of law and geography. Topics will include the legal-geographic dimensions of property; the regulation of public space; rights; nature; colonial dispossession; and globalization and the law. Prerequisite: GEOG 381. Writing.

#### **GEOG 441-4 Cities, Space, and Politics**

An evaluation of the nature of urbanization, having specific reference to theories of urban spatial structure and to comparisons of urbanization in Canada and abroad. Prerequisite: at least 60 units including GEOG 362.

#### **GEOG 444-4 Regional Development and Planning II**

The evaluation of regional development planning and practice; case study analysis of regional development programs with particular reference to Canadian

experience. Prerequisite: 60 units including GEOG 383.

#### **GEOG 445-4 Resource Planning**

This course introduces the student to the principles and practices of resource planning within a Canadian context. Special attention is paid to land-use planning as it relates to major resource sectors. Prerequisite: one of GEOG 322, 363, 383, or 389.

#### **GEOG 446-4 Migration and Globalization**

This course explores sites of socio-cultural change in a global context. Particular emphasis is placed on regional and international migration and the territorial and geopolitical bases of conflict. Prerequisite: 60 units including eight of upper division geography.

#### **GEOG 449-4 Environmental Processes and Urban Development**

An examination of environmental processes as they influence, and are influenced by, urban development, with attention to implications for urban policy and planning. Prerequisite: enrolment in the Post Baccalaureate Program in Sustainable Community Development or 60 units; and one of GEOG 351, 362, 383, 389 or SCD 301 (formerly CED 301).

#### **GEOG 451-4 Spatial Modeling**

Spatial models for the representation and simulation of physical, human and environmental processes. GIS and spatial analysis software are used in the laboratory for model development, from problem definition and solution to visualization. Prerequisite: GEOG 251 and one of GEOG 351, 352, 353 or 355. Quantitative.

#### **GEOG 453W-4 Remote Sensing of Environment**

Computational aspects of environmental remote sensing. Topics include digital image processing, image enhancement, sensor systems, statistical extraction, and environmental analysis. Prerequisite: GEOG 352 and 353. Quantitative/Writing.

#### **GEOG 455-4 Theoretical and Applied GIS**

A critical examination of advanced topics in GIS, such as: boundary definition, expert systems and artificial intelligence, error and uncertainty, and scale in a digital context. Examines social applications and the roles of GIS in society. Students will design original projects, including data acquisition, analysis, and web site development. Prerequisite: GEOG 355 and pre- or co-requisite GEOG 352. Students with credit for GEOG 452 may not take this course for further credit. Quantitative.

#### **GEOG 457-4 Geovisualization Interfaces**

The concepts, theories, and technology behind interactive and immersive interface technologies used for geospatial visualization. Applications and implications for GIScience and spatial knowledge acquisition. Combines GIScience, spatial cognition, and virtual environments/interface research perspectives. Prerequisite: GEOG 351 and 356 (or permission of instructor). Students who have taken GEOG 457 (STT) Geospatial Virtual Environments in fall 2005 or fall 2006 may not take this course for further credit.

#### **GEOG 460-4 Selected Regions**

A study of the geographical character of a major world region. Prerequisite: at least 60 units including eight of upper division geography courses.

#### **GEOG 462-4 The Geography of the United States**

Selected themes in the geography of the United States, addressing the biophysical environment, culture and landscape, resources and livelihood, population and settlement. Prerequisite: at least 60 units including eight of upper division geography courses.

#### **GEOG 466-4 Latin American Regional Development**

The course introduces students to a geographical analysis of patterns of Latin American development and planning. It is divided into two sections: geographical/historical development of selected countries; and analysis of common Latin American developmental models. A geographical perspective is used which stresses the interconnectedness of spatial and socio-economic structures. Prerequisite: 60 units including eight of upper division geography.

#### **GEOG 468-4 Society and Environment in China**

An examination of environmental issues facing rural people and their livelihoods in China from a political ecology perspective. Topics include: environmental history and concepts of nature; property rights in land and trees; agriculture; forests; wildlife and biodiversity; grasslands; and water. Prerequisite: GEOG 389.

#### **GEOG 469-4 The Canadian North and Middle North**

Special attention will be given to resource appraisal and utilization, spatial organization, and the consideration of future development; comparisons will be made with experience of sub-arctic development in other parts of the world. Prerequisite: at least 60 units including eight of upper division geography courses.

#### **GEOG 489-4 Selected Topics**

The topics will vary from term to term depending on the interests of faculty and students. Prerequisite: 75 units including 30 in geography.

#### **GEOG 490-4 Selected Topics**

The topics will vary from term to term depending on the interests of faculty and students. Prerequisite: 75 units including 30 in geography.

#### **GEOG 491-4 Honors Essay**

All candidates for honors will be required to submit a major paper on a geographical topic to be selected in consultation with the department. Prerequisite: 105 units and consent of supervisor. See a departmental academic advisor for details.

#### **GEOG 497-5 International Field Study**

A fieldwork based study of a selected region conducted in an international setting. Emphasis is placed on how to understand landscapes by relating concepts and models with direct observation, inference and collection of field evidence, as well as published literature on the selected region. Prerequisite: at least 60 units including 12 units of upper division geography courses.

#### **GEOG 600-0 Introduction to Graduate Studies: Fall Semester**

Introduction to graduate studies in the Department of Geography at Simon Fraser University, covering formal requirements and practical considerations.

#### **GEOG 601-0 Introduction to Graduate Studies: Spring Semester**

Completion of GEOG 600, with an emphasis on the preparation and presentation of the research proposal.

#### **GEOG 604-5 Research Design and Analytical Techniques in Human Geography**

Qualitative and quantitative techniques relevant to human geographic research.

#### **GEOG 605-4 Geographic Ideas and Methodology**

Contemporary and historical modes of analysis in human geography.

#### **GEOG 606-5 Research Design and Analytical Techniques in Physical Geography**

Research design, data collection and quantitative methods in physical geography.

#### **GEOG 611-4 Hydrology**

Conceptual and methodological bases of current hydrologic research.

#### **GEOG 612-4 Glacial Geomorphology**

Glacial landform-process models; field study of glacial landforms and sediments.

#### **GEOG 613-4 Fluvial Geomorphology**

An examination of current conceptual and methodological issues in fluvial geomorphology based on analyses of the primary research literature.

#### **GEOG 614-4 Climatology**

Recent theoretical developments in physical climatology.

#### **GEOG 615-4 Quaternary Environments**

Recent developments in paleoecology and the study of Quaternary environments.

#### **GEOG 617-4 Soil Science**

Soil physics, soil chemistry, soil biology and/or forest soils.

#### **GEOG 620-4 Selected Topics: Economy, Environment and Development**

Geographic perspectives on selected topics in economy and environment in Canadian and international contexts.

#### **GEOG 622-4 Theories and Practices of Development**

Conditions in the Third World: a review of theories and geographical solutions.

#### **GEOG 626-4 Multinational Corporations and Regional Development**

The influence of the policies and structures of multinational corporations on regional economic change.

#### **GEOG 640-4 Selected Topics in Social and Urban Geography**

Geographic perspectives on society and the city in Canadian and international contexts.

#### **GEOG 641-4 Morphogenesis and the Built Environment**

Evolution of built environments in urban contexts: morphological change and societal processes.

#### **GEOG 644-4 Regional Development and Planning**

Regional development in theory and practice with particular reference to resource based hinterland regions.

#### **GEOG 645-4 Resource Management**

Economic, social and political aspects of conservation and resource management.

#### **GEOG 646-4 Cultural Geography**

Relationships between cultural geography and related fields, particularly social theory and current philosophy.

#### **GEOG 651-4 Advanced Spatial Analysis and Modeling**

Perspectives on the description, analysis and prediction of geographical processes using spatial modeling and decision-making in a GIS environment.

#### **GEOG 653-4 Theoretical and Applied Remote Sensing**

Theory and applications of analytical processing procedures used with multispectral remote sensing data.

#### **GEOG 655-4 Advanced Principles of Geographic Information Science**

Examines data, data structures and computational methods that underlie GIS description and analysis. Illustrates the social science and science links between computers and geography.

#### **GEOG 656-4 Aerial Reconnaissance for Remote Sensing**

Theoretical and practical training in the acquisition of airborne multispectral remote sensing data.

**GEOG 666-4 Geography, Development Theory, and Latin America**

Geographic aspects of theories of development as they have been applied in Latin America.

**GEOG 681-4 Law and the Geographies of Power**

Case studies of the inter-relations between the social and political construction of law and space.

**GEOG 685-4 Resources, Environment and Food Production**

A global survey of the geographical context of food production.

**GEOG 691-4 Directed Readings**

Students may only take this course once during their program.

**GEOG 697-6 MSc Thesis****GEOG 698-6 MA Thesis****GEOG 699-6 PhD Thesis****German GERM****Faculty of Arts and Social Sciences****Department of Linguistics Language Training Institute****GERM 102-3 Introductory German I**

Emphasis on the acquisition of spoken fluency, correct pronunciation, and reading facility. This course will be for all students who have not taken BC grade 12 German or its equivalent.

**GERM 103-3 Introductory German II**

Continues the work of GERM 102. It should be taken, wherever possible, in the term immediately following GERM 102. Prerequisite: GERM 102 or equivalent.

**GERM 104-3 German for Reading Knowledge I**

This is a first year German course intended for absolute beginners who want to acquire some rudimentary reading knowledge of German. Prerequisite: no knowledge of German is required.

**GERM 201-3 Intermediate German I**

Emphasis on oral command, accurate and idiomatic expression; reading of intermediate texts. Prerequisite: GERM 103 or equivalent.

**GERM 202-3 Intermediate German II**

Continues the work of GERM 201. Considerable emphasis will be placed on reading, oral and written command of the language. Prerequisite: GERM 201 or equivalent.

**GERM 300-3 Advanced German: Composition and Conversation**

Practice in comprehension, reading, speaking and writing, combined with a review of the essential points of grammar. Prerequisite: GERM 202 or consent of the instructor.

**Gerontology GERO  
Faculty of Arts and Social Sciences****GERO 300-3 Introduction to Gerontology**

Examination of the aging process from a multi-disciplinary perspective. Physical and health factors in aging, economic and vocational factors in aging, family and community relations of older people, social policy and politics of aging. Throughout the course, emphasis will be placed on normal aging. Prerequisite: 60 units. Breadth-Social Sciences.

**GERO 301-3 Research Methods in Gerontology**

This course examines research methodology applied to the field of gerontology. Key areas covered include: operationalizing gerontological concepts; sampling older populations; longitudinal designs; outcome and

process evaluation of seniors' programs; and elementary data analyses. Prerequisite: 60 units. Recommended: STAT 203 (or equivalent).

**GERO 302-3 Health Promotion and Aging**

This course includes an examination of the development of contemporary understanding and practice of health promotion. Students will be given the opportunity to explore theories and models designed to explain health related behaviors and the determinants of health. Strategies for behavioral change and development of socio-environmental approaches will be discussed in the context of an aging Canadian population. Prerequisite: 60 units. Recommended: GERO 300.

**GERO 400-4 Seminar in Applied Gerontology**

Discussion of current issues in applied gerontology. Interdisciplinary orientation, drawing upon resource persons from within the University and practitioners in the community. Course requirements include participation in a group research project. Prerequisite: 60 units. GERO 300, 301 and two of PSYC 357, GERO 420 or KIN 461.

**GERO 401-3 Environment and Aging**

Impact of the macro- and microenvironment as it affects the aged. Discussion of planned housing and institutional living arrangements, territoriality and the need for privacy, home range and use of space, urban planning, responsive design of housing and care facilities, effects of relocation and institutionalization. Prerequisite: 60 units. Recommended: GERO 300.

**GERO 402-3 Drug Issues in Gerontology**

Considers pharmacological issues as they apply to older people; uses and abuses of commonly prescribed and non-prescribed medication; medication reviews; government subsidy programs. Prerequisite: 60 units, GERO 300.

**GERO 403-3 Counselling Issues with Older Adults**

An examination of the ways of adapting counselling theory and practice to meet the needs of older adults and their families. Emphasis will be placed on counselling techniques and outcomes appropriate to the needs of persons living independently, with their families, or in institutional settings. Prerequisite: GERO 300 and PSYC 357 or GERO 420.

**GERO 404-3 Health and Illness in Later Life**

An examination of issues related to health and illness among older adults, drawing upon theories and concepts from biological, social and public health sciences. An introduction to assessment and intervention skills useful to persons working with older adults in a broad range of practice settings. Prerequisite: 60 units, GERO 300.

**GERO 405-3 Aging in Small Communities and Rural Areas**

An examination of the demographic trends in aging in small communities and rural areas of Canada, the geographical and social contexts in which these are occurring and the experience of rural communities in assessing needs and providing support services and housing. Prerequisite: 60 units, GERO 300.

**GERO 406-3 Death and Dying**

The focus of this course is to provide the student with an in-depth understanding of the process of dying. By examining the process of dying, one's personal response to death as well as society's reaction and responsibilities toward dying, the student will gain new insights in caring for the dying person. Prerequisite: 60 units. Recommended: GERO 300.

**GERO 407-3 Nutrition and Aging**

This course examines specific nutritional conditions and concerns of the aging population. It does so by exploring the nutrient needs of the elderly as determined by physiological changes of aging, metabolic effects of common diseases, and biochemical interactions of medications. The course

includes a broad investigation of the psychological, sociological, and physical factors which influence food choice and ultimately nutritional status in aging. Prerequisite: 60 units. Recommended: GERO 300.

**GERO 408-4 Families over the Life Course**

This course entails a comprehensive interdisciplinary study of families and aging. In addition to providing an overview of theory and research on this topic, a variety of substantive issues will be critically examined, including: families in mid life, sibling relationships, divorce and remarriage, dating in later life, care giving, poverty, elder abuse, and policy development. Prerequisite: 60 units. Recommended: GERO 300.

**GERO 409-3 Mental Health and Aging**

Psychopathology often presents in distinct ways among older adults. The intent of this course is to examine disorders with their onset in later life and those that extend into later years. Students will derive an understanding of the diagnostic criteria for various disorders, prevalence, theories of etiology, and selected empirically validated interventions. Prerequisite: GERO 300. Recommended: GERO 403, PSYC 241. Students who received credit for GERO 411, when the course was offered under this title, may not take this course for further credit.

**GERO 410-3 Special Topics in Gerontology I**

Selected psychological, sociological, economic, biological and practical aspects of the aging of individuals and populations. Prerequisite: 60 units. Recommended: GERO 300.

**GERO 411-3 Special Topics in Gerontology II**

Selected psychological, sociological, economic, biological and practical aspects of the aging of individuals and populations. Prerequisite: 60 units. Recommended: GERO 300.

**GERO 412-3 Special Topics in Gerontology III**

Selected psychological, sociological, economic, biological and practical aspects of the aging of individuals and populations. Prerequisite: 60 units. Recommended: GERO 300.

**GERO 420-4 Sociology of Aging**

The structural and behavioral implications of aging. Topics include demographic aspects of aging; the relationship of aging to political, economic, familial and other social institutions; the psychological significance of aging. Prerequisite: 60 units. Recommended: GERO 300. This course is identical to SA 420 and students cannot take both courses for credit.

**GERO 435-3 Adult Guardianship Law**

A comprehensive exploration of the law affecting adult guardianship, substitute decision-making, and adult protection in Canada, including a detailed examination of the form, content and philosophical underpinnings of the relevant legislation in British Columbia. Topics include assessing mental incapability, powers of attorney, living wills and health care directives, end of life decision-making, the law affecting consent to health care, and court-ordered guardianship for adults. Prerequisite: 60 units. Recommended: GERO 300. This course is identical to CRIM 435 and students cannot take both courses for credit. Students who have taken CRIM 418 or GERO 410 may not take this course for further credit.

**GERO 801-4 Health Policy and Applied Issues in Gerontology**

The aim of this course is to examine linkages between long term care and other service sectors as well as to compare programs and services across community, provincial and national boundaries. A number of key policy issues will be discussed that pertain to the provision of health related services to older adults.

**GERO 802-4 Development and Evaluation of Health Promotion Programs for the Elderly**

This course deals with the design, implementation and evaluation of health promotion programs and services for older persons. Students will participate in the development and critical analysis of a variety of health initiatives aimed at healthful aging.

**GERO 803-4 Analytical Techniques for Gerontological Research**

This course has been specifically designed to provide training in quantitative data analysis using SPSSx Programming Language with a focus on behavioral research problems in gerontology.

**GERO 804-4 Advanced Qualitative Methods in Gerontology**

Examines qualitative research methods used in social science research with special emphasis on gerontology. Specific focus will be placed on conducting interviews and participant-observations; field-notes, analyzing text-based data; and writing of qualitative studies.

**GERO 805-4 Advanced Statistics for Behavioural Analysis in Gerontology**

Provides advanced statistical training for graduate students. Statistical techniques consistent with contemporary research will be highlighted with emphasis on continuous variables and the analysis of change and stability with older adult samples. Examples of techniques to be covered include: linear regression; analysis of variance; exploratory and confirmatory factor analyses; structural equation modelling; invariance analyses; and latent growth curve modelling.

**GERO 806-4 Interdisciplinary Theories in Gerontology**

Reviews major theories used in gerontology from diverse fields covering the individual and society, including environment and aging; health and aging; social and family relationships; social change; and behavioural change. Emphasis will be placed on understanding the fundamental assumptions of human aging experience underlying the theories; critical assessment of theoretical propositions; research evidence; and potential for synthesis.

**GERO 810-4 Community Based Housing for Older People**

This course presents an in-depth examination of theory, research and policy related to planning, designing, developing and managing housing for independent and semi-independent older adults.

**GERO 811-4 Institutional Living Environments**

This course focuses on design issues, theory, research and policy relevant to planning, developing and managing institutional living environments for dependent adults.

**GERO 820-4 Principles and Practices of Health Promotion**

This course is designed to cover and critically evaluate concepts, models and theories of health promotion and wellness in the aging population. These methods of implementation will be discussed in relation to individual and structural health system issues facing the aged.

**GERO 822-4 Families, Communities and Health**

Critically evaluates and synthesizes key theory, research and health promotion policy related to the intersection of aging families, communities and health. The principal theoretical perspectives will include: life course theory; social, human and cultural capital; ecological models; political economy; and community empowerment approaches.

**GERO 823-4 Mental Health and Illness in Later Life**

Provides an overview of the range of mental illnesses affecting older adults, their respective diagnostic

criteria, and empirically validated treatments (disorders with their onset in later life and those that extend into later years). Particular emphasis will be placed on the manner in which psychopathology presents differently among older adults, various theories of aetiology, barriers to diagnosis and treatment, and the social context in which mental illness is understood and treated across cultures.

**GERO 830-4 Human Factors, Technology, and Safety**

This course covers theoretical, research and industry literature pertaining to designing home, work, institutional and public environments that are ergonomically functional, safe, and satisfying to the older adult.

**GERO 840-4 Special Topics in Gerontology**

This course offers an opportunity to offer a specialized course in an area germane to the program but on a topic that is outside of the regular courses.

**GERO 850-0 Co-op Internship**

The internship consists of one full-time work term. Arrangements for the work terms are made through the Faculty of Arts Co-op Co-ordinator at least one term in advance. For further details, students should refer to the Co-operative Education section of the Calendar. Prerequisite: MA students in good standing with a minimum GPA of 3.0 may apply to enter the co-op internship after satisfactory completion of 16 units.

**GERO 889-4 Directed Studies**

This course consists of supervised readings in a particular field of specialization relevant to the selected area of concentration.

**GERO 898-6 Project**

A project must be written under committee supervision for formal examination as part of the program requirements for students in the project stream.

**GERO 899-6 Thesis**

A thesis must be written under committee supervision for formal examination as part of the program requirements for students in the thesis stream.

**GERO 998-6 PhD Thesis**

## Global Health GLOH Faculty of Health Sciences

**GLOH 540-4 A Global Perspective on the Organization and Delivery of Health Services**

Principles and concepts of organization and delivery of health services worldwide, including ambulatory, hospital, long-term, and mental health care. Problems in developed and resource-constrained nations and the feasibility of solutions. A case studies approach.

## Graduate Studies GRAD Faculty of Graduate Studies

**GRAD 800-0 Visiting Research Student**

Graduate students visiting SFU under the Canadian Graduate Student Research Mobility Agreement enrol in this course.

## Greek GRK Faculty of Arts and Social Sciences

**Department of Linguistics  
Language Training Institute****GRK 104-3 Modern Greek for Reading Comprehension I**

Modern Greek intended for beginners who desire to acquire basic reading comprehension skills. (distance

education) Students who complete this course successfully will be able to enrol in LANG 110. Students who in addition to completing this course also have more advanced verbal skills, will be able to enrol in LANG 160 or 210.

**GRK 110-3 Modern Greek for Beginners I**

An introduction to the Greek language that helps beginners to help develop survival skills in the most frequently encountered communicative situations. Prerequisite: permission of the instructor. Students with credit for LANG 110 when offered with the same title may not take this course for further credit.

**GRK 160-3 Modern Greek for Beginners II**

The aim of the course is to give those who have acquired the basic language skills a better understanding of the basic grammar of the Greek, and to develop their speaking and comprehension skills so that they are able to carry out small conversations. Reading comprehension, and the ability to write small paragraphs will also be emphasized. Prerequisites: GRK 110 or permission of the instructor. Students with credit for LANG 160 when offered with the same title may not take this course for further credit.

**GRK 210-3 Modern Greek Intermediate I**

The aim of the course is to continue developing students' Greek language skills so that they communicate in situations that extend beyond the basic level. The mediopassive voice for verbs, irregular classes of nouns, and the structure of subordinate sentences are some of the grammatical topics covered. Students will also receive extensive training in speaking, reading and writing at the level of a simple newspaper article. Prerequisite: GRK 160 or permission of the instructor. Students with credit for LANG 210 when offered with the same title may not take this course for further credit.

**GRK 260-3 Modern Greek Intermediate II**

Continues the work developed in GRK 210 including further training in speaking, reading and writing at an intermediate level. Prerequisite: GRK 210 or permission from the instructor. Students with credit for LANG 260 when offered with the same title may not take this course for further credit.

## Health Sciences HSCI Faculty of Health Sciences

**HSCI 100-3 Human Biology**

An examination of the biological processes that underlie human health and well-being, with emphasis on the evolutionary and ecological influences affecting human populations. Students with credit for BISC 101 and 102 may not take HSCI 100 for further credit.

**HSCI 120-3 Introduction to Human Sexuality and Sexual Behavior**

Introductory information about human sexuality across a broad spectrum of topic areas. Sexual function is a fundamental part of a full and healthy life, but misinformation, concerns, problems, and dysfunctions are prevalent. An evidence-based introduction to human sexual function and dysfunction, and normal psychosexual development across a range of sexual behaviors. A perspective on the effects of socialization on sexual attitudes and behavior. Breadth-Social Sciences

**HSCI 130-3 Foundations of Health Science**

How health, illness and disease are defined and measured for individuals and populations. Research strategies used to identify how health, illness and disease are distributed across human populations and how environmental, socio-economic, demographic, biological, behavioural and political factors influence individual and population health.

**HSCI 140-3 Complementary and Alternative Medicine**

A scientific, critical, and evidence-based examination of integrative, complementary, and alternative approaches to health. Why so many people are skeptical of conventional medicine and contemporary treatment modalities. Incorporation of traditional medicines into mainstream medicine. the need to investigate, and to protect the public from fraud. The extent to which both complementary and mainstream medicine can withstand the scrutiny of an evidence-based approach. Breadth-Social Sciences

**HSCI 150-3 Current Topics in Human Sexuality**

Current issues and controversies and their impact on the sexual behaviour and well-being of individuals at different ages and circumstances. Typical topics might include sexually transmitted diseases and AIDS, sexual orientation and cultural differences in tolerance, abuses of power, and sexually explicit media. Differing perspectives and a diversity of views will be presented in a non-prescriptive manner. As a result, many of the opinions expressed in this course will be controversial.

**HSCI 160-3 Global Perspectives on Health**

An introduction to the differences in health and health services among the nations of the globe. Vulnerable sub-populations worldwide and their special health needs. Mechanisms whereby events in one country can impact health in another. Future worldwide health risks, their economic and health consequences. SARS, avian 'flu,' West Nile virus, 'mad cow disease,' antibiotic resistant malaria or tuberculosis. Dangers to rich and poor nations from ignoring health problems in developing world. Breadth-Social Sciences

**HSCI 170-3 Working for Health**

Concepts including professionalism, professional ethics, interdisciplinarity, and knowledge translation will be explored along with types of health-related work, components of health care systems and public health, and workforce trends and tensions in Canada and internationally. Writing skills will be emphasized.

**HSCI 180-3 Drugs and Society**

Substance use within societies. Licit and illicit drug pharmacology, drug effects, risk factors, opportunities for intervention, drug policies and their implementation, and populations with unique vulnerabilities or needs. Major theories of substance use and addiction. Strengths and limitations of alternative approaches to managing substance use as a component of public health in Canada and globally.

**HSCI 199-3 Special Topics in Health Sciences**

A specific topic in health sciences which is not otherwise covered in-depth in regular courses. Prerequisite: will vary according to topic. Corequisite: will vary according to topic.

**HSCI 211-3 Perspectives on Cancer, Cardiovascular, and Metabolic Diseases**

An interdisciplinary overview of the major non-communicable diseases — cancers, cardiovascular and metabolic diseases — from a public health perspective. Review of biological mechanisms, risk factors, historical and cultural contexts, and global distribution. Prerequisite: HSCI 100 or BISC 101, HSCI 130.

**HSCI 212-3 Perspectives on Infectious and Immunological Diseases**

An integrated survey of infectious diseases and their social and economic causes and consequences. Infectious agents, including bacteria, protozoa, fungi and viruses -- how they spread, how they work, and how they can be stopped. Surveillance, prevention, and management of infectious diseases and epidemics. Prerequisite: HSCI 100 or BISC 101, HSCI 130.

**HSCI 214-3 Perspectives on Mental Health and Illness**

An interdisciplinary overview of mental health and mental illness among populations. A review of the distribution and risk factors of mental illnesses as well as the historical and cultural context of their development. Prerequisite: HSCI 100 or BISC 101, HSCI 130.

**HSCI 215-3 Perspectives on Disability and Injury**

An interdisciplinary overview of injury and disability. Review of global distribution and risk factors. Examination of disability and injury across multiple levels of analysis. Prerequisite: HSCI 100 or BISC 101, HSCI 130.

**HSCI 216-3 Ecological Determinants of Human Growth, Development and Health**

Effects that social and ecological factors have on human growth, development and health. Challenges such as epidemics, natural catastrophes, industrialization, globalization, migration, poverty, war, global warming, etc, leading to evolution and adaptations. Relationships between socio-ecological challenges, their health consequences and related gene-population variations and effects on growth, development, sexual maturation, reproductive investment, and senescence and health. Prerequisite: HSCI 100 or BISC 101.

**HSCI 301-3 Foundations of Health Promotion and Health Communication**

The role of health communication and education in the improvement of health and mitigation of disease. Strategies and methodology for public education regarding health maintenance, and preventive measures. New approaches in health promotion — legislation and the use of print media and web technology in health communication. Prerequisite: 45 units, including either HSCI 130 or KIN 140.

**HSCI 302-3 Evidence-based Decision Making in Health**

Decision making based on proven data. Effective criteria for rigorously evaluating health information and practices. Evaluation of health decisions influenced by political, commercial, or cultural factors. Prerequisite: one prerequisite and one corequisite from HSCI 211, 212, 214, 215.

**HSCI 303-3 Perspectives on Behavioral Risks**

An interdisciplinary overview from a public health perspective of behaviors and conditions associated with leading causes of morbidity and mortality. Prerequisite: 45 units, including either HSCI 130 or KIN 140.

**HSCI 304-3 Perspectives on Environmental Health**

Environmental risks and the impact of human activity on health. Chemical and biological hazards. Methodological approaches to their detection, assessment, management, and mitigation. Prerequisite: two HSCI 200-level courses one of which may be taken concurrently.

**HSCI 305-3 The Canadian Health System**

A comparative analysis of the Canadian health care and delivery systems. Organizational principles, health resources, access to care, service utilization, health care planning, and health promotion strategies. Societal and political issues that affect the Canadian health system. Prerequisite: 45 units, including either HSCI 130 or KIN 140.

**HSCI 306-3 Principles of Health Economics**

A study of micro- and macro-economic concepts used in the pursuit of better health and health care. Choices within limited resources, economic evaluation of efficiency, equity, elasticity of health systems, policy and regulatory issues. Prerequisite: two HSCI 200-level courses one of which may be taken concurrently.

**HSCI 307-3 Research Methods in Health Sciences**

Principles and applications in the contemporary research methodology in health sciences — strengths and weaknesses, successes and failures. Includes research methods associated with systematic health assessment and health planning. Prerequisite: two HSCI 200-level courses one of which may be taken concurrently.

**HSCI 308-3 Sickness and Wealth: Health in Global Perspective**

New formations of wealth and power that contribute to international health disparities and consideration of the relations of power both between and within nation-states that make some people sick and keep others well. Economic and political collusions that make people sick. Infectious disease and child survival, health implications of war, biotech, and the politics of food and water. Prerequisite: 45 units. Recommended: HSCI 130.

**HSCI 310-3 Exploratory Strategies in Data Analysis**

A foundation in computing and analytical skills for independent analysis of epidemiologic data. It includes a mandatory SAS computing laboratory. Prerequisite: STAT 302.

**HSCI 319W-3 Applied Health Ethics**

Practical ethical and legal issues in health sciences, emphasizing population and public health. Case studies approach highlighting current ethical dilemmas and decision-making in the context of global to local legal frameworks. Prerequisite: 30 units of completed course work. HSCI 319 is identical to PHIL 319 and students cannot receive credit for both courses. Writing.

**HSCI 321-3 Human Pathophysiology**

Molecular, cellular and systemic approach to examine topics in human pathophysiology. Prerequisite: MBB 231, or permission of the instructor.

**HSCI 323-3 Principles of Pharmacology and Toxicology**

Biological, molecular and biochemical actions of drugs and toxicants. Genetic and environmental risk determinants. Understanding the broad spectrum of toxicological problems encountered in clinical practice, drug development and regulation, and medical research. Prerequisite: MBB 231, CHEM 282, BISC 313.

**HSCI 324-3 Human Population Genetics and Evolution**

Human variation and human health in the context of population genetics, epidemiology, demography, and human evolution. Prerequisite: BISC 202.

**HSCI 329-3 Exploitation and Vulnerable Populations**

Competing understandings of the moral wrong of exploitation. Application to practices and relationships that are the focus of concern over exploitation in the context of public and population health. Prerequisite: PHIL 120W or HSCI 319W or PHIL 319W, or permission from the instructor.

**HSCI 330-3 Exploratory Strategies in Epidemiology**

The concepts and measurements of human population dynamics in epidemiological inference. Identification of causes and prevalence of disease. Demographic and molecular methodology to assess the determinants of health and disease. Prerequisite: STAT 302 and two HSCI 200-level courses one of which may be taken concurrently.

**HSCI 340-3 Social Determinants of Health**

Social determinants of health and health inequities. Explores how and why the social advantages and disadvantages that people experience — based on their social position(s) and social circumstances — determine their health status and overall well-being.

Prerequisite: 60 units and two HSCI 200-level courses, one of which may be taken concurrently.

### **HSCI 350-3 Co-op Practicum I**

First term of work experience in the Health Sciences Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Work terms are graded as Pass/Fail. Prerequisite: students must be accepted into the Health Sciences Co-op program and complete Bridging Online.

### **HSCI 351-3 Co-op Practicum II**

Second term of work experience in the Health Sciences Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Work terms are graded as Pass/Fail. Prerequisite: completion of HSCI 350 Co-op Practicum I.

### **HSCI 371-2 Special Topics in Health Sciences**

A specific topic in health sciences which is not otherwise covered in depth in regular courses. Prerequisite/Corequisite: will vary according to topic.

### **HSCI 372-3 Special Topics in Health Sciences**

A specific topic in health sciences which is not otherwise covered in depth in regular courses. Prerequisite/Corequisite: will vary according to topic.

### **HSCI 373-4 Special Topics in Health Sciences**

A specific topic in health sciences which is not otherwise covered in depth in regular courses. Prerequisite/Corequisite: will vary according to topic.

### **HSCI 399-3 Special Topics in Health Sciences II**

A specific topic in health sciences which is not otherwise covered in depth in regular courses. Prerequisite/Corequisite: will vary according to topic.

### **HSCI 401-3 Health Promotion: Individuals and Communities**

Behavior modification strategies and their applications in risk reduction, health promotion, and disease prevention. New approaches in behavior modification -- new media and new technology. Prerequisite: 60 units, including either HSCI 130 or KIN 140.

### **HSCI 402-3 Substance Use and Addiction**

Substance use and addiction within the context of public health. Determinants of substance abuse and dependence; varieties of substances and their associated health implication; compulsive and addictive behaviors; treatment approaches and their effectiveness for populations and groups; models of prevention; life-cycle and developmental considerations; identified populations; policies for prevention and control. Prerequisite: HSCI 214.

### **HSCI 403-3 Health and the Built Environment**

Relationships between the physical environment in which people live and their health and well being. How the built environment affects physical activity, obesity, exposure to pathogens and toxins, health status, mental health, and risk of illness and injury. How urban form, physical infrastructure, and landscape and building design can promote health. Prerequisite: 60 units. A course in epidemiology is recommended.

### **HSCI 404-3 Public Policy and Health Systems**

Major public policy issues affecting Canadian and international health care systems. How the public policy process affects financing, delivery, and regulation of health programs and services. Theories of policy development in the health sector. Evaluation of the extent to which evidence influences policy decisions. Controversies, including: finance, regulatory issue, system restructuring, models of governance, public vs. private service delivery and resource allocation. Prerequisite: 60 units.

### **HSCI 405-3 Global Health Ethics**

Ethical issues related to public health as they are located in and influenced by a global context. Consideration of several ethical approaches including utilitarianism, deontic ethics, and the capabilities approach, as well as theories of justice. Application of approaches to topics ranging from global markets in human organs to international migration of health workers and pharmaceutical testing in the Developing World. Prerequisite: 60 units and HSCI 319 or PHIL 319.

### **HSCI 406-3 Global Perspectives in Indigenous Health**

Examination of the health and health problems of Indigenous peoples from a global perspective. Comparative study of social and historical factors affecting Indigenous peoples that contribute to health conditions and health status. Efforts of Indigenous peoples to restore health to their Nations. Prerequisite: 45 undergraduate units.

### **HSCI 421-4 Health Survey Methods**

The utility of surveys in health research and practice. Strategies for design, administration, and analysis of data from qualitative and quantitative health surveys. Practical tools for exploratory analysis. Problems and limitations, and how to avoid them. Prerequisite: STAT 302 and 45 units.

### **HSCI 422-4 Diffusion Pathways in the Spread of Disease**

The dynamics of disease distribution processes, and the mechanisms and pathways by which diseases spread. Representation and analysis by computational and cartographic methods. Prerequisite: HSCI 330.

### **HSCI 423-3 Health Policy in Disease Mitigation and Public Health**

An overview of the tools of policy analysis as the means of shaping health care policy and the health of the public. The application of philosophical, political, and economic concepts to health policy debates and the improvement of health care delivery. Prerequisite: HSCI 305, 306.

### **HSCI 424-4 Strategic Applications of GIS in Health**

The use of mapping strategies and geographic information systems in identifying disease patterns and health risks. The relation of health problems to the distribution of markers of exposure, susceptibility, and health impact, and resulting risk management strategies for intervention, mitigation, and disease prevention. Prerequisite: 60 units and two HSCI 200-level courses, or permission of instructor. Recommended: GEOG 255, CMPT 100.

### **HSCI 426-3 Immune System I: Basis of Innate and Adaptive Immunity**

The basic organization of the immune system, including structure, function and genetics of antibodies, T-cell receptors, innate immune receptors, and the complement system. Innate, antibody and cellular immune responses and their control, and development of the cells involved in these responses. Prerequisite: MBB 331. HSCI 426 is identical to MBB 426 and HSCI 325 and students cannot take MBB 426 for further credit.

### **HSCI 427-3 Immune System II: Immune Responses in Health and Disease**

The immunologic response to bacterial, viral and parasitic infections, immunological diseases, such as autoimmune diseases, immunodeficiency, hypersensitivity reactions (including asthma and allergy) and transplantation-rejection reactions. Immunotherapeutics and vaccine development. Prerequisite: HSCI 426 or MBB 426 or permission of the instructor. HSCI 427 is identical to MBB 427 and HSCI 425 and students cannot take HSCI 427 for further credit.

### **HSCI 430-3 Health of Vulnerable Populations**

A study of the relationships between socioeconomic conditions and health in vulnerable populations. Impact of living conditions and access to health services on health risks, mortality, and morbidity, and strategies for better outcomes in disadvantaged communities. Prerequisite: HSCI 330 or 340, or permission of instructor.

### **HSCI 431-3 The Global HIV/AIDS Epidemic**

A multidisciplinary and international focus on the transmission, impact, prevention, and human aspects of the global HIV/AIDS epidemic. Prerequisite: 45 units. Recommended: HSCI 212, 330.

### **HSCI 432-3 Infectious Disease Epidemiology**

Tools for the surveillance, prevention, and control of infectious diseases and their application in public health programs. Prerequisite: HSCI 212, 330.

### **HSCI 438-3 Animal Virology**

Animal virology in the context of viral diseases in humans and animals. Animal viruses, their replication, virus-host interactions and viral diseases. Prerequisite: MBB 331 and BISC 303, or permission of the instructor.

### **HSCI 439-3 Pathogenesis of Human and Animal Viral Infectious Diseases**

Mechanisms underlying viral infectious diseases in humans and animals at the levels of the molecule, cell, organ and the individual. Virus spread in a host, host responses to the viral infection, and virus-host interactions that result in disease. Prerequisite: HSCI 321, 438, or permission of the instructor.

### **HSCI 440-4 Cell Pathophysiology Laboratory**

A review of pathophysiological mechanisms of disease with an emphasis on the molecular, cellular and genetic bases of pathology. Laboratory includes cell-biology experiments, histological preparations, and microscopic examination of normal and diseased tissues. Prerequisite: MBB 308 and HSCI 321, or permission from instructor.

### **HSCI 441-4 Virology Laboratory**

Study, in a laboratory environment, of viruses as infectious agents that threaten human health and viral associated cancer as well as their use in gene therapy. Includes cell culture methods, virus isolation and quantification, virus purification, etc. Prerequisite: HSCI 438, MBB 308.

### **HSCI 442-4 Immunology Laboratory**

Study, in a laboratory environment, of the molecular and cellular basis of the immune system. Immunology overlaps with many other biological disciplines includes biochemistry, molecular biology, cell biology, genetics, physiology, microbiology and relies on laboratory methods and concepts derived from these disciplines. Prerequisite: HSCI or MBB 426, MBB 308.

### **HSCI 443-4 Environmental Health Toxicology Laboratory**

The scientific principles underlying the toxic actions of various substances important to human health. The chemical nature of toxic substances, their mode of action, uptake and metabolism. Analytical techniques for analyzing samples of toxicological importance in the work and general environment and short-term assays used in risk assessment will be introduced. Prerequisite: HSCI 323, MBB 308.

### **HSCI 450-3 Co-op Practicum III**

Third term of work experience in the Health Sciences Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Work terms are graded as Pass/Fail. Prerequisite: completion of HSCI 351 Co-op Practicum II.

### **HSCI 451-3 Co-op Practicum IV**

Fourth term of work experience in the Health Sciences Co-operative Education Program. Units



from this course do not count towards the units required for an SFU degree. Work terms are graded as Pass/Fail. Prerequisite: completion of HSCI 450 Co-op Practicum III.

#### **HSCI 452-3 Co-op Practicum V**

Fifth term of work experience in the Health Sciences Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Work terms are graded as Pass/Fail. Prerequisite: completion of HSCI 451 Co-op Practicum IV.

#### **HSCI 471-3 Special Topics in Health Sciences I**

Selected topics in areas not currently offered within the undergraduate course offerings. Prerequisite: will vary according to topic.

#### **HSCI 472-3 Special Topics in Health Sciences II**

Selected topics in areas not currently offered within the undergraduate course offerings. Prerequisite: will vary according to topic.

#### **HSCI 473-3 Special Topics in Health Sciences III**

Selected topics in areas not currently offered within the undergraduate course offerings. Prerequisite: will vary according to topic.

#### **HSCI 474-3 Seminar in Neuropharmacology**

Mechanisms of drug action in the brain, including several classes of drugs and neurotransmitter systems that are involved in mental health disorders, drug addiction and neurodegeneration. Prerequisite: HSCI 323 and MBB 331, or permission of the instructor.

#### **HSCI 475-3 Seminar in Molecular Mechanisms of Epigenetics**

Discussion of novel and advanced topics in chemical covalent modifications of chromatin that influence gene regulation. Prerequisite: MBB 331, or permission of the instructor.

#### **HSCI 476-3 Seminar in Molecular Basis of Drug Action and Environmental Exposure**

Current topics in molecular biology-based research into pathologies of disease related to drug and environmental exposures. Focus on systems pharmacology and the molecular determinants of drug and toxicant action as they relate to gene expression and signal transduction. Prerequisite: HSCI 323 and MBB 331, or permission of the instructor.

#### **HSCI 477-3 Seminar in Vaccine Immunology**

Immunological concepts of vaccines and vaccinology including vaccination, correlates of immune protection, humoral and mucosal immunity, adjuvants, recombinant vaccine technology, 'designer' vaccines, and HIV/AIDS vaccine design as a paradigm for modern vaccinology. Prerequisite: BISC 303 and HSCI 426 or MBB 426, or permission of the instructor. Recommended: HSCI 427 or MBB 427.

#### **HSCI 478-3 Seminar in Molecular Epidemiology of Infectious Diseases**

Application of modern molecular methods to epidemiological questions. Globally-relevant and emerging infectious diseases will be highlighted. Prerequisite: HSCI 330, BISC 303 and MBB 331, or permission of the instructor. Recommended: HSCI 324.

#### **HSCI 481-3 Senior Seminar in Social Health Science**

An in-depth overview of the sociocultural, epidemiological, and policy aspects of population and public health. Prerequisite: HSCI majors with 90 units, including at least 15 upper division HSCI units. Other prerequisites may vary according to topic.

#### **HSCI 482-3 Senior Seminar in Infectious Diseases**

An in-depth overview of newly emerging and re-emerging infectious diseases in the context of disease prevention, surveillance and control. Prerequisite: HSCI majors with 90 units, including HSCI 330 and HSCI 325, or permission from instructor.

#### **HSCI 483-3 Senior Seminar in Environmental Health**

An in-depth overview of environmental health, environmental risks and human activity in relation to environmental health in the context of disease prevention, surveillance and control. Prerequisite: HSCI majors with 90 units, including HSCI 304, 323 and 330, or permission from instructor.

#### **HSCI 484-3 Senior Seminar in Population Health Research**

Scientific research in population health. Developing and evaluating research protocols, taking a general research question and turning it into an analysis plan, carrying out the analysis, and writing up the findings for presentation and publication. Prerequisite: HSCI majors with 90 units, including HSCI 330 and STAT 302, or permission from instructor.

#### **HSCI 485-3 Senior Seminar in Mental Health and Addictions**

Treatment of current issues in mental health and addictions from a population and public health perspective. Students will examine several topics from theoretical, methodological and policy perspectives. Prerequisite: HSCI majors with 90 units, including at least 15 upper division HSCI units. Other prerequisites may vary according to topic.

#### **HSCI 486-3 Senior Seminar in Global Health**

Treatment of current global health issues. Students will examine several topics from theoretical, methodological and policy perspectives. Prerequisite: HSCI majors with 90 units, including at least 15 upper division HSCI units. Other prerequisites may vary according to topic.

#### **HSCI 488-3 Directed Studies in Health Sciences**

Independent studies on topics selected in consultation with the supervising instructor. A student will be permitted to enroll in this course only if she or he obtains the prior written agreement of a professor who will act as research supervisor.

#### **HSCI 489-3 Directed Research in Health Sciences**

Independent research on topics selected in consultation with the supervising instructor. A student will be permitted to enrol in this course only if she or he obtains the prior written agreement of a professor who will act as research supervisor.

#### **HSCI 490-5 Research Proposal**

Research proposal for the honors thesis. HSCI 490, 491 and 492 together form the honors thesis. Limited to honors students upon written agreement of the faculty supervisor.

#### **HSCI 491-5 Independent Research**

Research proposal for the honors thesis. HSCI 490, 491 and 492 together form the honors thesis. Limited to honors students upon written agreement of the faculty supervisor. Prerequisite/corequisite: HSCI 490.

#### **HSCI 492-5 Honors Research Thesis**

Independent honors research thesis. HSCI 490, 491 and 492 together form the honors thesis. Limited to honors students upon written agreement of the faculty supervisor. Prerequisite or corequisite: HSCI 491.

#### **HSCI 499-3 Special Topics in Health Sciences III**

A specific topic in health sciences which is not otherwise covered in depth in regular courses. Prerequisite/Corequisite: will vary according to topic.

#### **HSCI 774-3 Seminar in Neuropharmacology**

Mechanisms of drug action in the brain, including several classes of drugs and neurotransmitter systems that are involved in mental health disorders, drug addiction and neurodegeneration. Prerequisite: HSCI 323, MBB 331, or permission of the instructor.

#### **HSCI 775-3 Seminar in Molecular Mechanisms of Epigenetics**

Discussion of novel and advanced topics in chemical covalent modifications of chromatin that influence gene regulation. Prerequisite: MBB 331 or permission from the instructor.

#### **HSCI 776-3 Seminar in Molecular Basis of Drug Action and Environmental Exposure**

Topics in molecular biology-based research into pathologies of disease related to drug and environmental exposures will be discussed. Focus on systems pharmacology and the molecular determinants of drug and toxicant action as they relate to gene expression and signal transduction. Prerequisite: HSCI 323, MBB 331, or permission of the instructor.

#### **HSCI 777-3 Seminar in Vaccine Immunology**

Exposes current immunological concepts of vaccines and vaccinology including vaccination, correlates of immune protection, humoral and mucosal immunity, adjuvants, recombinant vaccine technology, 'designer' vaccines, and HIV/AIDS vaccine design as a paradigm for modern vaccinology. Current literature in these areas will be reviewed intensely. Prerequisite: BISC 303, MBB 426, or permission from the instructor.

#### **HSCI 778-3 Seminar in Molecular Epidemiology of Infectious Diseases**

Application of modern molecular methods to epidemiological questions. Globally-relevant and emerging infectious diseases will be highlighted. The course will emphasize critical review of the current literature in the field. Prerequisite: BISC 303, 330, MBB 331, or permission from the instructor.

#### **HSCI 800-3 Fundamentals of Biostatistics**

Introduction to the practice of statistics with examples from health sciences literatures. Emphasizes statistical thinking and basic statistical concepts. Coverage includes basic descriptive statistics, elementary probability concepts, probability and sampling models, exploratory data analysis for univariate and bivariate data, one sample and two sample tests for means and proportions. Prerequisite: admission to the graduate program or permission of the instructor. Students who have taken HSCI 800 Special Topics 'Introduction to Biostatistics' cannot take this course for credit.

#### **HSCI 801-4 Biostatistics for Population Health Practice I**

Basic statistical concepts as applied to diverse problems in epidemiologic and public health research. Emphasizes interpretation and concepts rather than calculations. Basic study designs' statistics. Descriptive and graphical methods, fundamentals of probability distribution, rates and standardization, contingency tables, odds ratios, confidence intervals, hypothesis testing, life tables, Linear regression. Prerequisite: an undergraduate course in statistics or completion of HSCI 800.

#### **HSCI 802-4 Principles of Epidemiology for Public Health**

The underlying concepts and methods of epidemiology in the context of population and public health. Study designs (clinical trials, cohort studies, case-control studies, and cross-sectional), measures



of disease frequency and effect, validity and precision, confounding and effect modification, analysis of two-by-two tables, and options for control. Students will acquire skills in the critical interpretation of the epidemiologic literature, methodology of estimating measures of disease frequency and effect and common measures of potential impact; evaluation of study design; analysis of bias and confounding; and options for control of extraneous factors. HSCI 801 may be taken concurrently.

### **HSCI 803-3 Qualitative and Survey Research Methods**

Methodologies and strategic research design for advances in knowledge and understanding in the health sciences. Problem definition, sampling, data collection, analysis, proposal writing, and ethical issues are addressed. Provides experiential and intellectual grounding in surveys, interviews, focus groups, and ethnography. Prerequisite: admission to the graduate program or permission of the instructor.

### **HSCI 804-3 Biostatistics for Population Health Practice II**

Statistical methods related to public health. Probability distributions, basic statistical inference on means and proportions and general concepts of hypothesis testing. Measures of association. Simple and multivariable linear regression models, dummy variables, and logistic regression models. Survival data analysis. Prerequisite: HSCI 801.

### **HSCI 805-3 Intermediate Epidemiologic Methods**

Follow-up course to HSCI 802. Designing, conducting, analyzing, and interpreting epidemiologic research. Theoretical frameworks, concepts of inference, measures of disease occurrence and effect, study designs, issues in measurement, bias, confounding, and interaction. Critical assessment of the epidemiologic and public health literature. Prerequisite: HSCI 801 and 802.

### **HSCI 806-3 Principles of Demographic Analysis**

This seminar course is designed to introduce students to demographic techniques and principles through the discussion of the applications of various measures, case studies, and software programs. The emphasis is on applying techniques and principles learned in class to undertake demographic analyses in the lab. Prerequisite: HSCI 801.

### **HSCI 807-3 Researching Health Inequities**

Critical examination of methodologies and methods for research on health inequities related to class, race, ethnicity, gender and other social axes of marginalization and power. Covers a range of disciplines (epidemiology, social sciences), methodologies (positivist, critical, feminist, indigenous) and methods (qualitative, quantitative, action-oriented). Emphasis on causes of and solutions to systemic health inequities. Prerequisite: HSCI 802 and 803, or permission of instructor.

### **HSCI 815-3 Concepts of Population and Public Health Practice**

Introduction to population health paradigms and the history of public health. Understanding the factors that influence health over the lifespan. Fundamentals of public health strategies including health promotion, public policy, disease prevention, communication in health, behavior change, and program planning and evaluation. Prerequisite: admission to the graduate program or permission of the Instructor.

### **HSCI 821-3 Problems in Global Health**

Problem-focused introduction to global health. Critical appraisal of current global health problems in the context of processes of globalization. Understanding and addressing health inequities, within and between countries. A case approach. Graded. Prerequisite:

admission to the graduate program or permission of the instructor.

### **HSCI 822-3 Globalization and Health Inequities**

The mechanisms by which globalization impacts health. Roles of technologies, politics, economics, legal structures, culture, and social environments. The positive and negative impacts of global trends in trade, ideology, governance, community building, conflict, poverty, and the environment. A case studies approach. Prerequisite: admission to the graduate program or permission of the instructor.

### **HSCI 823-3 Health, Gender and Development**

Central role played by gender in health and development. Relationship of gender inequities to access to and control of resources needed to protect health. Use of gender lens in evaluating health systems and economic outcomes. Practical application of gender in health development approach to health financing, resource allocation policy problems in resource-constrained nations. A case studies approach. Prerequisite: admission to the graduate program or permission of the instructor.

### **HSCI 824-3 Comparative Health Care Systems**

Concepts of health, illness, sickness and disease. History and development of health systems, and comparison of the social ethics, organization, and financing of different national health systems. The design of health systems — strengths and weaknesses of alternative systems for health care and delivery. Current strategies for health system reform in resource-rich and resource-constrained nations. A case studies approach. Prerequisite: admission to the graduate program or permission of the instructor.

### **HSCI 825-3 Advocacy and Communication in Global Health**

Health advocacy, the policy framework within which it operates, its key principles, skills, and practice issues. Role, theories, and methods of health communication and advocacy in global health from the community to global level. Useful means: media advocacy, community mobilization, and trans-national collaboration. Use of information technology to promote population health and pro-health policy change. A case studies approach. Prerequisite: admission to the graduate program or permission of the instructor.

### **HSCI 826-3 Program Planning and Evaluation in Global Health**

Practical approaches to health needs assessment, needs prioritization, health program planning, and health program evaluation in low-to-middle income countries and/or resource-poor settings. Gender-based analyses are emphasized throughout. A case study approach. Prerequisite: admission to the graduate program or permission of the instructor.

### **HSCI 827-3 Analysis of the Canadian Health Care Delivery System**

Components of health care systems, issues, and interactions between components. System outputs, medical services and the delivery of primary health care. The Canadian health system and alternatives that impact it or provide better models for delivery. Effecting change, policy development, health system design; criteria for evaluating alternatives. Comparison of different measures of health status; trend analysis for predicting future health care and funding. Components of expenditure. Prerequisite: admission to the graduate program or permission of the instructor.

### **HSCI 828-3 Health, Human Security, and Social Justice**

Global health issues which are fundamental to human security, but outside the scope of international security studies. Focus on vulnerable populations, especially gender perspectives on globalization and

health. Conflict, humanitarian emergencies and public health. A case studies approach. Prerequisite: admission to the graduate program or permission of the instructor.

### **HSCI 829-3 Health Policy Making in a Global Context**

A case-study based approach to policy analysis, formation, decision-making and evaluation in global health contexts. Frameworks for developing policy. Program planning and evaluation methodologies. Prerequisite: admission to the graduate program or permission of the instructor.

### **HSCI 830-3 Health Promotion**

Population health promotion and disease prevention theories, frameworks, and techniques for planning, implementing and evaluating policy and programs in resource-constrained countries. Building collaborations and participatory community-based approaches. Addressing change at the individual, organizational, community, population, and global level. A case studies approach. Graded. Prerequisite: admission to the graduate program or permission of instructor.

### **HSCI 835-3 Social and Behavioural Contexts of Health and Disease**

Examination of the major social and behavioral variables -- social class, poverty, income distribution, gender, race, social networks/support, psychological stress, community cohesion, and the work and neighborhood environment -- that affect the public's health. Evaluation of the empirical research linking each construct to population health status. Methods are introduced to operationalize each construct for the purposes of application in public health research. Prerequisite: admission to the graduate program or permission of the instructor.

### **HSCI 838-3 Theorizing Social Inequities and Health**

Critical analysis of theories and frameworks central to research and practice on health inequities. Emphasis on mechanisms through which gender, race, ethnicity, social class and other social axes of marginalization and power intersect to influence health outcomes at the population level. Prerequisite: HSCI 835 or permission of instructor.

### **HSCI 839-3 Strategies for Reducing Health Inequities**

Critical application of theory and research on social inequities and health to the development of interventions, programs and policies for reducing health inequities at the population level. Emphasis on critical, collaborative, evidence-based, reflexive public health practice. Prerequisite: HSCI 807, 838, or permission of the instructor.

### **HSCI 845-3 Environmental and Occupational Health**

Globalization and industrialization impacts on the health of the environment, populations, and workers. Environmental hazards in consumables (food, air, and water) and waste (liquid, solid, and gaseous) with special reference to hazardous waste. Risk assessment in community, workplace, and residential settings. A case studies approach. Prerequisite: admission to the graduate program or permission of the instructor.

### **HSCI 846-3 Environmental Health Exposure Assessment and Analysis**

Assessment and analysis of exposure to physical, chemical, and biological contaminants in environmental and occupational settings. Theory and methods of assessing exposure through direct and indirect methods. Introduction to statistical and modeling techniques used in interpreting exposure data, describing sources of exposure variability, and identifying important determinants of exposure. Prerequisite: HSCI 845 or permission of the instructor.

**HSCI 847-3 Risk Assessment and Communication for Human Health**

Concepts and tools involved in human health risk assessment, with a particular emphasis on those aspects relevant to occupational and environmental exposures. The main steps involved in a risk assessment and application to basic risk/exposure situations. Identify the strengths and weaknesses of different approaches. Risk management and the policy process. Prerequisite: HSCI 802 or permission of the instructor.

**HSCI 848-3 Toxicology, Susceptibility and Environmental Health**

Provides students with an understanding of basic principles in toxicology and gives them an appreciation for the experimental efforts to address the physiologies and factors underlying morbidity and mortality in response to toxic insults. Material selected will highlight different biological systems that are sensitive to common environmental pollutants and the role that genes play in toxicant response. Prerequisite: HSCI 845 or permission of the instructor.

**HSCI 849-3 Environmental and Occupational Epidemiology**

Epidemiological studies of environmental and workplace exposures. Critical evaluation of epidemiological studies of environmental and occupational exposures. Prerequisite: HSCI 802, 845 or permission of the instructor.

**HSCI 850-3 Air Pollution and Human Health**

Basic air pollution concepts. Exploring the evidence of links between air pollution and adverse human health effects, including both mortality and morbidity. Air quality management at the international, national, and local levels. Focus includes airborne particles, traffic-generated pollution and indoor biomass burning. Prerequisite: HSCI 845 or permission of the instructor.

**HSCI 855-3 Disease Prevention and Control**

Infectious and chronic disease prevention and control strategies and program implementation. Components of disease prevention and control programs, including surveillance, epidemic preparedness, immunization, outbreak response. How they apply to specific diseases. A global perspective, including low and middle income countries. Case studies. Prerequisite: admission to the graduate program or permission of the instructor.

**HSCI 870-3 Global Health and International Affairs**

Intersection of international affairs and global health. Pressing global health issues are analyzed as they intersect with the global economy, international development, and security. Prerequisite: HSCI 822, or permission of the instructor.

**HSCI 880-3 Practicum**

Students participate in a workplace practicum to obtain experience in community public health practices. Practica are the equivalent of full-time course work, and may focus on local, regional, national or international health practices. Following completion of the practicum, students are expected to be on campus to prepare a poster presentation summarizing their practicum experience. Graded complete or incomplete. Prerequisite: students will consult with their senior supervisor on all courses that must be taken before going on practicum. All students are expected to complete at minimum the following courses: HSCI 801, 802, 803, 901. Under special circumstances students may request written permission from the director, public health practice, and the senior supervisor to substitute one of the prerequisite courses, or to carry out the practicum prior to completion of the required courses.

**HSCI 890-4 Special Topics in Health Sciences**

Special topics in areas not currently covered within the graduate program offerings. Prerequisites: depending on the special topic offered.

**HSCI 891-3 Special Topics in Health Sciences**

Special topics in areas not currently covered within the graduate program offerings. Prerequisite will depend on the special topic offered.

**HSCI 892-2 Special Topics in Health Sciences**

Special topics in areas not currently covered within the graduate program offerings. Prerequisite will depend on the special topic offered.

**HSCI 893-3 Directed Studies in Health Sciences****HSCI 894-4 Directed Studies in Health Sciences****HSCI 895-0 Project Completion**

Master's Project in progress. Prerequisite: HSCI 897-3.

**HSCI 896-0 Thesis Completion**

Master's Thesis in progress. Registration in this course is equivalent to full time course work. Prerequisite: HSCI 898.

**HSCI 897-3 Master's Project**

Graded incomplete/complete. Prerequisite: HSCI 880.

**HSCI 898-6 Master's Thesis**

Graded incomplete/complete.

**HSCI 900-1 Seminars in Population and Public Health**

Presentations will be given by faculty, students, and visiting scholars, followed by seminar discussions. This is a required course for all graduate students, and normally taken in the spring term. Graded satisfactory/unsatisfactory. Prerequisite: admission to a graduate program or permission of the instructor.

**HSCI 901-1 Practicum Preparation Seminar**

Seminars and lectures are designed to assist students to identify potential practicum sites and to develop their practicum plan. Normally students complete this course in the first term of their first year in residence. Graded complete or incomplete. Prerequisite: admission to the graduate program or permission of the instructor.

## History HIST

### Faculty of Arts and Social Sciences

**HIST 101-3 Canada to Confederation**

A survey of Canadian history to 1867. Breadth-Humanities.

**HIST 102W-3 Canada since Confederation**

A survey of Canadian history since 1867. Writing/Breadth-Humanities.

**HIST 104-3 The Americas from Colonization to Independence**

A comparative exploration of the colonization of North and South America by the various European empires together with the role of Native and African peoples in the Americas, from the late fifteenth century to the onset of political independence three hundred years later. Breadth-Humanities.

**HIST 106-3 The Making of Modern Europe**

An introduction to the major political, social, economic, cultural, and intellectual developments that have formed modern European society. Breadth-Humanities.

**HIST 110-3 Introduction to the History of Science**

Introduces the main themes and events in the development of science, including cosmology, physics, alchemy, chemistry and biology. Breadth-Humanities/Science.

**HIST 130-3 Modern World History**

A survey of the history of the world from circa 1405 to the present, with a focus on global historical phenomena. Topics may include political, economic, cultural, and environmental aspects of globalization, religious and scientific revolutions, industrialization, nationalism, decolonization, and the evolution of modernity. Breadth-Humanities.

**HIST 146-3 Africa after the Transatlantic Slave Trade**

An introductory survey of colonization, of social, political and environmental change under colonial rule, and of the stormy history of state-society relations in Africa since independence. Breadth-Humanities.

**HIST 151-3 The Modern Middle East**

An introductory survey of the changing societies of the Middle East since 1800. Emphasis will be placed on familiarizing students with the basic aspects of Islamic society, the influence of European imperialism, the modernization of traditional societies, the origins of the Arab-Israeli conflict, and the social and political ferment in the period since the Second World War. Breadth-Humanities.

**HIST 201-3 The History of Western Canada**

A history of the prairies and British Columbia dealing with the aboriginal cultures, the fur trade, the evolution of transportation and links with metropolitan areas, settlement and economic development, political evolution, evolving rural and urban systems, and intellectual and cultural identities.

**HIST 204-3 The Social History of Canada**

A survey of major themes in Canadian social history from the arrival of Europeans to the present day. Particular attention will be paid to the effects of gender, race and class on the experience of Canadians over time. Recommended: HIST 101 and 102. Breadth-Humanities.

**HIST 205-3 Japan to 1600**

A survey of Japanese history from antiquity until the late nineteenth century or early modern period. Prerequisite: students with credit for HIST 206 offered prior to 2002-2 cannot take this course for further credit. Breadth-Humanities.

**HIST 206-3 Japan Since 1868**

A survey of Japanese history from 1868 until 1952 which will examine, among other topics, the establishment of the Japanese colonial empire, the wars with Russia, China and the United States, and the post-war Allied Occupation. Recommended: HIST 205. Breadth-Humanities.

**HIST 208-3 Latin America: the Colonial Period**

A study of the process and institutions of Spanish colonial administration with emphasis on the clash of European and Amerindian cultures. Recommended: HIST 104. Breadth-Humanities.

**HIST 209-3 Latin America: the National Period**

A survey of Latin American history from Independence (1808-24) to the present: post-Independence political collapse and reconsolidation; Latin America in the world trade system and the changing conditions of economic dependency; nationalist reform (Mexico) and socialist revolution (Cuba), liberalism, populism, and the rise of modernizing military. Treatment by topics and broad historical period rather than country by country. Recommended: HIST 208. Breadth-Humanities.

**HIST 212-3 The United States to 1877**

The emergence and development of American civilization from the establishment of the colonies through the Civil War and Reconstruction. Recommended: HIST 104. Breadth-Humanities.

**HIST 213-3 The United States Since 1877**

An analysis of the transformation of American culture from post-Civil War to modern forms. Topics to be

discussed will include industrialization, urbanization, foreign policy, cultural and political antagonisms. Recommended: HIST 212. Breadth-Humanities.

### **HIST 214-3 Quebec Society, Culture, and Politics**

Covers Quebec history from the French regime to the recent past, focusing on the evolution of cultural identity, on the nationalist movement, and on the long-standing tension between tradition and modernity. Prerequisite: HIST 101. Students who have credit for HIST 328 may not take HIST 214 for further credit.

### **HIST 215-3 The Making of the British Isles**

A broad survey of some of the central developments that have shaped the history of the British Isles from Roman antiquity to the present. Breadth-Humanities.

### **HIST 220-3 Late Medieval and Renaissance Europe**

An introduction to the world of late Medieval and Renaissance Europe (c.1200-c.1500). Breadth-Humanities.

### **HIST 223-3 Early Modern Europe, 1500-1789**

A survey of early modern European history which will examine, among other topics, the wars of religion, the 17th century revolutions, 16th and 17th century economic development, the scientific revolution, the enlightenment and the political and social character of the old regime. Breadth-Humanities.

### **HIST 224-3 Europe from the French Revolution to the First World War**

A survey of European history emphasizing the French Revolution, and Napoleonic Europe and first Industrial Revolution, liberalism and its opponents, agrarian conservatism, liberalism and conservatism, the Revolutions of 1848, the struggles for political unification, the second Industrial Revolution and the origins of the First World War. Breadth-Humanities.

### **HIST 225-3 20th Century Europe**

A survey of European history from the First World War emphasizing the origins and effects of the World Wars, the emergence of the Soviet Union and of fascism. Breadth-Humanities.

### **HIST 231-3 History of Africa to the 19th Century: From Ancient Times to the Slave Trade**

A general, introductory survey of Africa's rich pre-colonial past, its vibrant cultures and sophisticated technologies, far-reaching commercial and political networks, and dynamic (and internally differentiated) social systems. Also discusses the trans-Atlantic trade in African slaves and the arrival of Europeans on African shores.

### **HIST 249-3 Classical Islamic Civilization**

This course offers a broad survey of the development of classical Islamic civilization. It begins with an examination of the origins of Islam in seventh century Arabia and concludes with the break-up of the Abbasid Caliphate of Baghdad in the 13th century. Emphasis will be placed on gaining an understanding of the doctrines of Islam, the significance of the rise and fall of the early Arab-Islamic empires, and the role of Islam in world history. Breadth-Humanities.

### **HIST 252-3 Islamic India**

A survey of the cultural patterns, social and political forces, and historical contexts that have shaped the Islamic period of Indian history. Special attention will be directed toward the Mughal empire and its decline. Breadth-Humanities.

### **HIST 254-3 China to 1800**

This course offers a broad survey of the history of China from antiquity to the eve of its modern transformations at the turn of the nineteenth century. It aims to challenge the perception of an unchanging China and to encourage students to develop a critical

understanding of the forces integrating and dividing this geo-cultural unit. Breadth-Humanities.

### **HIST 255-3 China since 1800**

A survey of the history of China from the end of the eighteenth century, when traditional Chinese society was arguably at its height of development, to the end of the twentieth century when the social revolutions promised by the Communist regime have clearly failed to materialize. The main objectives are to provide students with vocabularies and tools to understand and interpret the political, social and cultural transformations in modern China and to initiate them in the art and techniques of historical analysis. Breadth-Humanities.

### **HIST 256-3 The People's Republic of China**

An introduction to the politics, society, and economy of mainland China from the aftermath of the Sino-Japanese war to the rapid social, political, and economic changes of the last two decades.

### **HIST 277-3 History of Greek Civilization**

Surveys the history of Greek civilization from Mycenaean Greece to the twentieth century. Prerequisite: students who have taken HIST 307 under this topic may not take this course for further credit.

### **HIST 288-3 History of Christianity to 1500**

A survey of the history of Christianity from its origins to 1500. Breadth-Humanities.

### **HIST 299-3 Problems in History**

This course is designed to allow students to pursue in greater depth a particular historical problem. It will be offered either as an individual reading course or in small seminars, depending upon student and faculty interest. Admission only by prior consent of instructor. Students may not take this course more than once or after they have completed 60 units of course work. Recommended: at least four university level courses in history.

### **HIST 300-4 Approaches to History**

An examination of the conceptual problems involved in the historian's attempt to apprehend the past and its relationship to the present and future. Particular attention will be paid to the nature of historical knowledge and explanation, and to the broad systems and patterns in which history has been conceived. Prerequisite: 45 units including 9 units of lower division history.

### **HIST 304-4 Alexander the Great and the Quest for World Empire**

Examines Alexander in the context of ancient history as well as his legacy, which provides unique insight into why there have been and continue to be illusive and deadly quests for world domination. Prerequisite: 45 units including 9 units of lower division history. Students who have taken HIST 391-4 D200 in 1051, HIST 309-4 E100 in 1061 or HIST 486 E100 in 1074 may not take HIST 304-4 for further credit.

### **HIST 305-4 Honors Seminar**

Open only to honors students. An introduction to the honors program followed by detailed study of various philosophies and methodologies of historical writing. Prerequisite: 45 units including nine units of lower division history; admission to the honors program in history.

### **HIST 307-4 Selected Topics in Hellenic Studies**

Selected Topics. Prerequisite: 45 units including 9 units of lower division History.

### **HIST 308-4 Byzantium from Constantine to the end of the Dark Ages: 4th to the 9th Centuries**

Examines the first 5 centuries of the Byzantine history, focusing on the state that survived, by twelve hundred years, the collapse of the Western roman empire in the fifth century AD, and follows the evolution of its culture, language, political traditions

and religion. Prerequisite: 45 units including 9 units of lower division history.

### **HIST 315-4 Politics and Society in England, 1500-1707**

This course provides a general overview of the social and political history of Tudor and Stuart England. Prerequisite: 45 units including 9 units of lower division history.

### **HIST 316-4 English Society since the Mid 18th Century**

A study of English society, culture and politics from the accession of George III to the present. Prerequisite: 45 units including 9 units of lower division history.

### **HIST 317-4 From Reconstruction to Destruction: The Byzantine Empire from the 9th to the 15th Centuries**

Covers Byzantine history from the 9th century and the end of the "Dark Ages" to the end of the Empire in the 15th century and offers students an account of the Byzantine State's and its society's interaction with the Islamic and Christian European world of the west. Prerequisite: 45 units, including 9 units of lower division history.

### **HIST 319-4 The Modern French Nation**

An examination of the history of modern France from 1789 to the present with a focus on the social, political, and cultural divisions within the French nation resulting from the Revolutionary era, industrialization, the expansion and eventual decolonization of France's colonial empire, and the World Wars and their consequences. Prerequisite: 45 units including nine units of lower division history.

### **HIST 320-4 European Reformation**

An advanced examination of the complex history and patterns of the Religious Reformation in sixteenth century Europe. Emphasis will be placed on the religious thought of the period, and on its social and political context. Prerequisite: 45 units including nine units of lower division history. Strongly recommended: HIST 220 or 223. Students who have taken HIST 403-4 prior to 2005-3 cannot take this course for further credit.

### **HIST 321-4 State and Society in Early Modern Europe**

Examines major themes and developments in the political and social history of early modern Europe (1500-1789). Will consider various forces (e.g. religious, cultural, economic, military) that contributed to or challenged the strengthening of state power. While the focus of the course will usually be comparative in nature, it may on occasion also emphasize one particular state. Prerequisite: 45 units, including nine units of lower division History. Students who have taken HIST 318 or HIST 331 prior to 2005-3 may not take HIST 321 for further credit.

### **HIST 322-4 Atlantic and Pacific Migration**

Topics in the history of Atlantic and Pacific migrations to the Americas with attention given to the contexts from which the migrants came, why they migrated, and how they adjusted. Examples may be taken from the United States, Canada and Latin America. Prerequisite: 45 units including nine units of lower division history.

### **HIST 325-4 History of Aboriginal Peoples of North America to 1850**

Examines selected themes in the history of Aboriginal peoples of North America from first contact with Europeans to the mid-nineteenth century. Prerequisite: 45 units including nine units of lower division history. FNST 325 and HIST 325 are identical and students cannot take both courses for credit.

### **HIST 326-4 History of Aboriginal Peoples of North America Since 1850**

Examines selected themes in the history of Aboriginal peoples of North America in the nineteenth and

twentieth centuries. Prerequisite: 45 units including nine units of lower division history. FNST 326 and HIST 326 are identical and students cannot take both courses for credit.

#### **HIST 327-4 Canadian Labor and Working Class History**

An examination of the history of labor, primarily in English Canada, during the 19th and 20th centuries. The evolution of trade unions and labor-political movements will be examined together with the impact of industrialization, the rise of mass production, changing patterns of immigration and other contexts of working-class culture and material life. Special attention will be paid to British Columbia as a case study. Historically the course examines 'working class history' as a particular way of studying the past. What is the concept of 'the working class'? Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 101, 102 and 204.

#### **HIST 329-4 Canadian Family History**

A detailed examination of the changing Canadian family, and its relationship to the state, since the eighteenth century. Prerequisite: 45 units including nine units of lower division history.

#### **HIST 332-4 Politics and Culture in Modern Germany**

An examination of major themes in German history from the establishment of a united German Empire in 1871 to the reunification of Germany in 1990. Emphasis will be placed on issues related to the formation of German national identity and the problems associated with modernization and militarism. Attention will be given to the difficulties of Weimar democracy, the nature of the Third Reich, and contrasting developments in East and West Germany after 1949. Prerequisite: 45 units including nine units of lower division history.

#### **HIST 333-4 Modern Italy: Risorgimento to Republic**

Surveys Italian society, politics and culture from the mid-nineteenth century to the present. Prerequisite: 45 units including nine units of lower division history. Students who have taken HIST 390 D100 in spring 2007 (1071) may not take this course for further credit.

#### **HIST 334-4 The Making of Imperial Russia**

An examination of major themes in Russian history up to the Revolution of 1917, including the emergence of the modern Russian state; the organization of the empire at the center and the periphery; the contest between imperial, national, and religious identities; social, economic, and cultural transformations; and the Russian Empire's involvement in world politics. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 105 and 106.

#### **HIST 335-4 The Soviet Project**

An examination of the history of the Soviet Union from its creation to its collapse, emphasizing its ideology, culture, role in global politics, and social and economic transformations. Prerequisite: 45 units including nine units of lower division history.

#### **HIST 336-4 Ideas and Society in Early Modern Europe**

An examination of intellectual developments of early modern Europe (sixteenth to eighteenth centuries) in their broader social, cultural, political or economic contexts. The course will focus on a particular subject e.g. Northern humanism, debates about the nature and social role of women (the querelle de femmes), the Enlightenment. Students will read excerpts from important contemporary sources. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 223 or 224.

#### **HIST 337-4 The Balance of Power in Europe**

An examination of the shift of power among competing European states from the late 19th century

until the mid-20th century. Attention will be given to the origins and consequences of the two great European wars and to the policies of Britain, France, Germany, and Russia which brought about the significant changes in the balances of power. Study will be based primarily upon documents from the Chanceries. Prerequisite: 45 units including nine units of lower division history credit. Recommended: HIST 225.

#### **HIST 338-4 World War II**

An introduction to the history of the origins and course of the second world war. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 225.

#### **HIST 339-4 The British Empire and Commonwealth**

This course provides an outline history of the British Empire, its rise and decline, and discusses the origin and significance of the Commonwealth. In addition there is a detailed account of the 'Westminster Model' of parliamentary democracy, on which the political institutions of many Commonwealth nations are based. Prerequisite: 45 units including nine units of lower division history.

#### **HIST 343-4 Africa and the Slave Trade**

An examination of the trade in slaves from Africa and the rise of slavery within that continent. Prerequisite: 45 units including nine units of lower division history. Students with credit for HIST 478 may not enroll in HIST 343. Recommended: HIST 146 or 231.

#### **HIST 344-4 Themes in Modern East Africa**

Examines the diversity of environments, cultures and livelihoods in East Africa and the Horn in the context of long-term trans-regional influences, especially slave trade, cash cropping, colonization and post-colonial politics, and the expansion of the world religions into East Africa. Prerequisite: 45 units including nine units of lower division history. Recommended: one of HIST 146 or 231.

#### **HIST 345W-4 Selected Topics in European History**

A writing-intensive examination of selected topics in European history. The content will vary from offering to offering. See department for further information. Prerequisite: 45 units including nine units of lower division history. Students may not take selected topics with HIST 345 for further credit if duplicating content of another history course and vice versa. Writing.

#### **HIST 348-4 A History of Twentieth Century South Africa**

An examination of the economic, social and political history of 20th century South Africa. Particular attention will be paid to the factors which led to the rise of apartheid. Prerequisite: 45 units including nine units of lower division history. Recommended: at least one of HIST 146, 231.

#### **HIST 350-4 The Ottoman Empire and Turkey**

A study of Ottoman society and the impact of Ottoman rule in the Middle East from the conquest of Constantinople to the death of Atatürk, the founder of the Turkish Republic. Emphasis will be on the conflict between preservation and reform in the nineteenth century and on the significance of the Ottoman legacy for twentieth century Turkey and the Arab world. Prerequisite: 45 units including nine units of lower division history. Recommended: one of HIST 151, 249, 251.

#### **HIST 352-4 Religion and Politics in Modern Iran**

The intellectual and social history of greater Iran from the Safavids to the twentieth century. Emphasis will be on the relationship between religion and politics. Prerequisite: 45 units including nine units of lower division history. Recommended: one of HIST 151, 249, 251.

#### **HIST 354-4 Imperialism and Modernity in the Middle East**

This course examines the role of imperialism in the transformation of societies in the Middle East and North Africa over the last two centuries. Focusing mainly on the cases of Ottoman, British and French empire building, the course discusses the socio-economic, cultural and political changes brought about by the interaction of various segments of local societies with these imperial powers. Prerequisite: 45 units including nine units of lower division history. Recommended: one of HIST 151, 249, 251.

#### **HIST 355-4 The Arab Middle East in the Twentieth Century**

An examination of this century's major themes in the history of Syria, Lebanon, Iraq, Jordan and Saudi Arabia, as well as other states of the Arabian peninsula. Topics to be investigated include the origins of Arab nationalism and Islamic reformism; the origins and development of the Lebanese question; the emergence of the politics of the military in Iraq and Syria, and the special role of the Jordanian and Arabian monarchies. Prerequisite: 45 units including nine units of lower division history credit. Recommended: one of HIST 151, 249, 251.

#### **HIST 360-4 History of Science: Greeks to Newton**

Traces the transformation of the study of the natural world from the Greek natural philosophers to the time of Isaac Newton. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 110.

#### **HIST 361-4 The History of Science: The Eighteenth Century to the Present**

Topics in the history of science and technology to be selected from the 18th/19th century chemistry, the history of the idea of evolution and of Darwinian science, physics to 1914, or 19th century industrial science. Prerequisite: 45 units including nine units of lower division history or science.

#### **HIST 362-4 Ireland from the Penal Era to Partition**

Examines key social, economic, political, and intellectual developments in Ireland from the 18th to the mid-20th centuries. It will also explore shifting understandings of the 'Irish nation' and consider how communal historical memory can be appropriated to serve different political agendas. Prerequisite: 45 units, including nine units of lower division history. Students who have taken HIST 390 D200 in spring term 2006 (1061) may not take this course for further credit.

#### **HIST 363-4 History of Technology**

Examines technology from ancient tool use, through the place of invention in the development of civilization. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 130.

#### **HIST 366-4 Social History of China since 1800**

A survey of Chinese society from circa 1800 to the early twentieth century. The course begins with an introduction to Chinese society in the mid-Qing period and then moves on to discuss intellectual, social, cultural, and political changes that are often associated with the 'impact of the West.' Prerequisite: 45 units including nine units of lower division history including HIST 255.

#### **HIST 368W-4 Selected Topics in the History of the Wider World**

A writing-intensive examination of selected topics in the history of Asia, Africa and/or the Middle East. The content will vary from offering to offering. See department for further information. Prerequisite: 45 units including nine units of lower division history. Students may not take selected topics within HIST

368 for further credit if duplicating content of another history course and vice versa. Writing.

### **HIST 370-3 Practicum I**

This is the first term of work experience in co-operative education. It is meant to be exploratory in nature. Units from this course do not count towards the units required for an SFU degree. Prerequisite: normally 60 units with a minimum CGPA of 2.75. Students should apply to the co-op co-ordinator one term in advance.

### **HIST 371-4 The Asia-Pacific War in Modern Japanese History**

Covers the period in Japan from the 1930s to the 1950s and will introduce students to topics such as wartime atrocities, the dropping of the atomic bombs and the prosecution of war criminals. It will also attempt to explain why so much controversy surrounds interpretations of events arising from Japan's last war, the Asia-Pacific War. Prerequisite: 45 units including nine units of lower division history. Recommended: at least one course on modern Japan.

### **HIST 373-4 Conquest in North America, 1500-1900**

A broad examination of attempts by aboriginal, imperial, and mercantile forces to claim and control the North American continent from the arrival of Spanish conquistadors in the early 1500s to the surrender of Geronimo in 1886. Explores the processes of colonization from many perspectives, including Aboriginal, American, English, French, Russian, and Spanish ambitions and activities. Prerequisite: 45 units including nine units of lower division History and one of HIST 101 or 212, or permission of the department. Breadth-Humanities.

### **HIST 374W-4 Selected Topics in the History of the Americas**

A writing-intensive examination of selected topics in the history of the Americas. The content will vary from offering to offering. See department for further information. Prerequisite: 45 units including nine units of lower division history. Students may not take selected topics within HIST 374 for further credit if duplicating content of another history course and vice versa. Writing.

### **HIST 375-3 Practicum II**

This is the second term of the Co-operative Education Program. Building on the experience of the first employment term, this term will provide a work experience that integrates and builds on the research and writing skills associated with the discipline of history. Units from this course do not count towards the units required for an SFU degree. Prerequisite: normally 75 units (including HIST 370) with a minimum CGPA of 2.75. Students should apply to the co-op co-ordinator one term in advance.

### **HIST 376-4 North American West**

Examines themes in the development of the western portions of North America, their incorporation into nation states, and the tensions between local, regional, and national systems during the last two centuries. Themes will include race, ethnicity, class labor, capital, and environment. Field Trip to Gulf of Georgia Cannery National Historical Site of Canada. Prerequisite: 45 units including nine units of lower division history. Students with credit for HIST 391 in 1057 may not take this course for further credit.

### **HIST 377-4 Environmental History**

Examines the reciprocal influences between humans and nature through time. Topics may include settlement, agriculture, technology, politics, urbanization, science, and conservation. Prerequisite: 45 units including nine units of lower division History. The course is identical to GEOG 377 and students cannot take both courses for credit.

### **HIST 378-4 The United States in the World since 1865**

Examines how the United States has influenced the world (and vice versa) from the American Civil War to the 'war on terror.' Topics include: the diplomatic and political history of American foreign relations; economics and the American roots of 'globalization'; race, racism and the movement of peoples; and the relationship between culture and the extension of American interests overseas. Prerequisite: 45 units including nine units of lower division History. Recommended: HIST 212 and 213, HIST 208 and 209. Students who have taken HIST 390 in 1051 may not take this course for further credit.

### **HIST 382-4 African-American History, since 1865**

Examines black history from the end of the American Civil War. The course focuses on the external and internal forces which shaped black communities across the nation. Special attention will be paid to these communities' struggles against the forces which sought to confine black people to an inferior place in society. Prerequisite: 45 units including nine units of lower division history.

### **HIST 388-4 Christianity and Globalization**

An examination of select topics in Christianity and globalization, with an emphasis on the early-modern period. Students will explore the connections between regions rather than individual regional histories. Prerequisite: 45 units, including nine units of lower division history credit.

### **HIST 390-4 Studies in History I**

Special topics. Prerequisite: 45 units including nine units of lower division history.

### **HIST 391-4 Studies in History II**

Special topics. Prerequisite: 45 units including nine units of lower division history.

### **HIST 400-4 Seminar in Historical Methods**

A study of methodology, including such subjects as principles of historical criticism, annotation and transcription of source material, generalization, and the techniques of history and the social sciences. Examples will be drawn from all areas in which the department teaches. Prerequisite: 45 units including nine units of lower division history credit.

### **HIST 401-4 Problems in Modern German History**

An examination of major debates concerning the history of late-nineteenth and twentieth century Germany. Themes may include the nature of German modernity, interpretations of the Third Reich, or German memory after the Second World War. Prerequisite: 45 units, including nine units of lower division history and one of HIST 224, 225, 332 or permission of the department. Students who have taken HIST 486 in 2002-3 or 2003-3 may not take HIST 401 for further credit.

### **HIST 402-4 Renaissance Italy**

An exploration of the history and historiography of the Renaissance Italy. Emphasis will be given to politics, religion, culture and the economy, and to a balanced study of the Italian peninsula, including Florence, Venice, Rome, Naples, the countryside and smaller urban centres. Prerequisite: 45 units including nine units of lower division history and one of HIST 220, 223, HUM 219, 305, 311, 312 or permission of the department.

### **HIST 404-4 Protestants, Papists and Puritans: Culture and Belief in Early Modern England, 1500-1640**

From the world of late-medieval piety to the outbreak of the English Civil War, this research seminar examines the changing nature of religious belief in early modern England with a particular focus on the origins, development and impact of Protestantism. Prerequisite: 45 units including nine units of lower

division history and one of HIST 223, 315, 320, 405, 439 or permission of the department.

### **HIST 405-4 Authority and Community in Early Modern English Society, 1500-1700**

Examines select problems in the social history of early modern England with a particular focus on the changing relationship of authority and local communities and the level of the village and parish. Prerequisite: 45 units including nine units of lower division history and one of HIST 215, 223, 315, 316, 404 or permission of the department.

### **HIST 407-4 Popular Culture in Great Britain and Europe**

This course will study culture in Great Britain and Europe since 1500. Themes may include the sixteenth century separation between popular and elite culture, Carnival, the witch craze, popular ballads, the institution of 'rational recreation' during the Industrial Revolution, the late Victorian Music Hall, the cultural emancipation of women, and the effects on working class culture of economic depression and world war. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 105 or 106.

### **HIST 412-4 Marxism and the Writing of History**

This course aims to provide a basic understanding of Marx's theory of history and to introduce students to some of the important ideas used by Marxists in the writing of history. Readings for the course will include some of Marx' original work, the writings of historians who have been influenced by Marx as well as selected writings from some of Marx's critics. Prerequisite: 45 units including nine units of lower division history.

### **HIST 413-4 Britain and Europe in the Twentieth Century**

An examination, by means of a series of case studies, of the ways in which Britain's ambiguous relationships with Europe, the Empire/Commonwealth and the United States have shaped its identity in the twentieth century. Prerequisite: HIST 225 plus 45 units including nine units of lower division History. Recommended: HIST 337.

### **HIST 414-4 The Impact of the Great War**

A brief look at the political, social, and territorial changes of the Versailles settlement, followed by an examination of the impact of the war upon Europe, particularly through the examples of fascism in Italy, national socialism in Germany and the general breakdown of the liberal order during the 1930's. In certain semesters additional attention may be given to the Soviet Union. Prerequisite: HIST 225 plus 45 units including nine units of lower division history. Recommended: HIST 337.

### **HIST 415-4 Victorian Britain**

A study of major developments and controversies -- social, cultural, political, religious, economic -- during the period of the rise of industrial and class society. Prerequisite: 45 units including nine units of lower division history. Recommended: one or more of HIST 224, 315, 316.

### **HIST 416-4 The French Revolution**

An analysis of the origins of the Revolution, of its changing nature, and of its impact on society. The Revolution will be examined in its European context. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 223, 224.

### **HIST 417-4 Problems in Modern French History**

An examination of a principal aspect of, or period in, the history of French society since the Revolution. For example, attention may be given to the 19th century French revolutionary tradition, or to society and culture in the Third, Fourth and Fifth Republics, or to colonialism and decolonisation. Prerequisite: 45 units

including nine units of lower division history. Recommended: HIST 224 or 225.

#### **HIST 419-4 Problems in Modern Russian History**

Advanced analysis of specific problems in social, intellectual, and political history of modern Russia. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 224 or 225.

#### **HIST 420-4 Russia as a Multiethnic Empire**

An examination of how the Russian Empire grew, was maintained, and came to an end, if it did end, through a study of imperial and colonial policies and practices and the responses to these by the area's diverse peoples. Prerequisite: 45 units including nine units of lower division history.

#### **HIST 421-4 Modern Greece, 1864-1925**

Greece and Greek society will serve as a case study of a Balkan country that underwent several political and social transformations. Prerequisite: 45 units including nine units of lower division history.

#### **HIST 422-4 Greece, 1935-1944: Occupation and Resistance**

Examines the cycle of violence that followed the Axis occupation of Greece and created a political schism that lasted until the 1980s. The course will focus on Greek resistance, foreign relations and relations with the British intelligence services. Prerequisite: 45 units including nine units of lower division history.

#### **HIST 424-4 Problems in the Cultural History of Canada**

Selected problems in Canadian ideas and attitudes on such topics as the arts, religion, education, minority and native cultures, nationalism, and Canadian historiography. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 101, 102.

#### **HIST 425-4 Gender and History**

Explores historical changes in masculinity and femininity. Using a thematic and transnational/comparative approach, it will examine how gender identities are formed and refashioned within different historical contexts. It will also explore the interaction between gender and other systems of power such as race, class, and ethnicity. Prerequisite: 45 units including nine units of lower division history.

#### **HIST 426-4 State Power and Social Regulation in North America**

An examination of the growth and evolution of the relationship between state and society in North America. It will examine the myriad direct and indirect ways in which the state has regulated the lives of North Americans and the equally diverse ways in which North Americans have sought to influence and shape state policy. Prerequisite: 45 units including nine units of lower division history. Recommended: PHIL 120 or 220.

#### **HIST 427-4 Problems in the History of Aboriginal Peoples**

Examination of selected themes in the history of Aboriginal peoples. Prerequisite: 45 units including nine units of lower division history.

#### **HIST 428-4 Problems in the Social and Economic History of Canada**

Selected problems in the history of Canadian agriculture and industrial development, migration and settlement, labor, native policy and class structure. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 101, 102.

#### **HIST 430-4 New France**

Social, cultural, intellectual, economic, military, and administrative aspects of New France. Prerequisite: HIST 101 plus 45 units including nine units of lower division history. Recommended: HIST 102.

#### **HIST 432-4 Problems in Environmental History**

An investigation into the major themes and arguments in the environmental histories of North America, emphasizing how different individuals and groups have used, perceived, and managed their environments over time. Prerequisite: 45 units including nine units of lower division history. This course is identical to GEOG 432 and students cannot take both courses for credit.

#### **HIST 433-4 Italian Films, Italian Histories**

Explores the representation of modern Italian history through the medium of film. Prerequisite: 45 units, including nine units of lower division history plus eight units of upper division history, or any one of the following courses: HIST 486 D100 (spring 2006 Italian Fascism); HIST 390 D100 (spring 2007 Modern Italy); HIST 486 D100 (spring 2008 Fascist Italy). Students who have taken HIST 486 D100 in fall 2007 (1077) may not take this course for further credit.

#### **HIST 436-4 British Columbia**

Selected problems in the social, cultural, economic and political development of British Columbia. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 101 and 102.

#### **HIST 439-4 Catholicism in Early Modern Europe**

An examination of the complex history of Catholicism in Europe in the period 1500-1789. By elucidating the diversity within and among institutions and religious experiences, it will challenge the traditional assumption that Catholicism constituted a religious monolith impervious to historical change. Subjects for particular focus may include historiographical approaches to Catholicism, the papacy, the Society of Jesus, popular religion, the role of art. Prerequisite: 45 units, including nine units of lower division history and one of HIST 220, 223 or 320.

#### **HIST 442-4 America's Empires**

Explores the various empires (Indigenous, Spanish, French, Dutch, British) that sought dominance in North America after 1500, and discusses the usefulness of 'empire' as a way of thinking about history and power. Prerequisite: 45 units including nine units of lower division history. Recommended: at least one of HIST 208, 209, 212, 213, and 223. Students with credit for HIST 487 in 1047 may not take this course for further credit.

#### **HIST 444-4 Conceptualizing Atlantic Canada**

Explores the social, political, economic, cultural, and intellectual environments in which the region of Atlantic Canada has been created and re-imagined over time. Prerequisite: 45 units, including nine units of lower division history. Recommended: HIST 101 or 102. Students who have taken HIST 485 D100 in fall term 2006 (1067) may not take HIST 444 for further credit.

#### **HIST 446-4 American Revolution and the Making of the Constitution**

Selected topics may include the Revolutionary War Era; the American Enlightenment; the New Nation; American Diplomacy in the Formative Period. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 212.

#### **HIST 450-4 Race, Expansion and War in the Early American Republic**

Explores the awkward relationship between racial diversity and territorial expansion in the early American republic, and examines the political, social, economic and cultural elements that led to the American Civil War. Prerequisite: 45 units including nine units of lower division history. Students with credit for HIST 447 under the same topic may not take HIST 450 for further credit. Recommended: HIST 212.

#### **HIST 451-4 Oral History: Theories and Practices**

Examines theoretical debates, ethical issues, and methodological challenges that revolve around the field of oral history. Prerequisite: 45 units including nine units of lower division history.

#### **HIST 454-4 The History of Sexuality**

Explores how ideas, practices and identities have changed over time in response to social, political and economic pressures. Emphasis on postmodern approaches to understanding sexuality, and the international historical scholarship it has generated. Chronological and geographical focus of this course may vary. Prerequisite: 45 units including nine units of lower division history.

#### **HIST 455-4 Race in the Americas**

An examination of the role of racial thinking in the history of the Americas, from the era of the Conquest to the present day. Topics may include African and Indigenous slavery, the development of scientific racism in the 18th and 19th centuries, and the persistence of racism in the present day. Prerequisite: 45 units including nine units of lower division history.

#### **HIST 456-4 The Late Ottoman Empire: State, Culture and Social Transformation, 1750-1923**

Focuses on major issues and trends in the history of the Ottoman Empire from the mid-eighteenth century to its demise in the aftermath of World War I. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 151 and 249. Students who have taken HIST 486 D200 in 1061 may not take this course for further credit.

#### **HIST 457-4 The Turkish Republic: Politics, Society, and Culture, 1918-Present**

Examines the political, social, and cultural transformation in Turkey from the end of World War I to the present. Topics may include the Ottoman legacy in the Turkish Republic, issues of nation building, national identity and ethnicity, the role of the military in Turkish politics, changing concepts of gender, the role of political Islam, and Turkish diasporas. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 151 and 249. Students with credit in HIST 486 D100 in 1057 may not take this course for further credit.

#### **HIST 458-4 Problems in Latin American Regional History**

Advanced concepts and methodology applied to the study of one or more Latin American regions. Examples are: pre-Columbian and colonial Middle America; revolutionary Mexico 1910-1970, Brazil from Slavery to Militarism, frontier society to hyper-urbanism in the La Plata countries. Prerequisite: 45 units including nine units of lower division history. Recommended: one of HIST 104, 208, 209, LAS 200.

#### **HIST 459-4 Problems in the Political and Social History Latin America**

Advanced concepts and methodology applied to the study of traditional and contemporary institutions (the church, the great estate, the peasantry, elite structures) and/or political movements (agrarian revolution, populism, the modernizing military). Emphasis placed on changing historiographical interpretations. Prerequisite: 45 units including nine units of lower division history. Recommended: one of HIST 104, 208, 209, LAS 200.

#### **HIST 460-4 Themes in Byzantine History**

Familiarizes the student with the main problems in the study of Byzantine social, political, economic and intellectual history. Students will be exposed to the main primary sources available to the Byzantinist and will read articles and books by the most influential scholars in the field of Byzantine studies. Prerequisite: 45 units, including 9 hours of lower division history.

**HIST 461-4 Oral History: Practicum**

A comprehensive oral history project for students who have completed HIST 451. Prerequisite: 45 units including nine units of lower division history and HIST 451.

**HIST 462-4 Religion, Ethnicity, and Politics in Twentieth Century Northern Ireland**

Explores the creation of Northern Ireland and the conflicting understandings of the past that led to discrimination and sectarian violence in the Twentieth Century. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 362.

**HIST 465-4 The Palestinian-Israeli Conflict**

A discussion of the modern history of nation-building in the context of the Arab-Israeli conflict. The topics discussed include Zionism, the British Mandate in Palestine, the creation of the state of Israel, the rise of modern Palestinian nationalism, and the role of the Palestinian-Israeli dispute in regional and international affairs. Prerequisite: 45 units including nine units of lower division history and one of HIST 151, 249, 251, 350, 354, 355 or permission of the department.

**HIST 466-4 Religion and Society in Africa, Nineteenth and Twentieth Centuries**

Explores the transition from the practice of indigenous religions to adherence to Christianity or Islam in Africa over the last two centuries. Examines through a series of case studies the growth of the world religions in Africa and the interaction of both with African religion. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 146. Students who have taken HIST 486 D100 in fall term 2006 (1067) may not take HIST 466 for further credit.

**HIST 467-4 Modern Egypt**

An interpretive discussion of the course of modern Egyptian history. This may range from the advent to power of Muhammad Ali Pasha until recent times, or may focus on specific periods of revolutionary change. Prerequisite: 45 units including nine units of lower division history and one of HIST 151, 249, 251, 350, 354, 355 or permission of the department.

**HIST 468-4 Problems in the History of Religion**

An advanced examination into the concepts and methodology of the history of religion. Prerequisite: 45 units, including nine units of lower division history.

**HIST 469-4 Islamic Social and Intellectual History**

Advanced analysis of specific problems in Islamic social and intellectual history, with an emphasis on traditional patterns and on their transformation in the modern world. Prerequisite: 45 units including nine units of lower division history. Recommended: one of HIST 249 or 352.

**HIST 470-3 Practicum III**

This is the third term of the Co-operative Education Program. The work experience will be focused in a specialized area of the student's choice. Units from this course do not count towards the units required for an SFU degree. Prerequisite: normally 90 units (including HIST 370 and 375) with a minimum CGPA of 2.75. Students should apply to the co-op co-ordinator one term in advance. Students entering 400 division seminars should have an appropriate background in 100 and 200 division and/or 300 division history. Normally, students should have completed 45 units (or the equivalent) prior to enrollment in any upper division history course.

**HIST 471-4 Women in Modern Japanese History**

The history of Japan from 1600 to the mid 20th century with a focus on the economic, social, cultural and political contributions of women. Prerequisite: 45 units including nine units of lower division history. Students with credit for HIST 485 in 2001-1 or HIST

488 in 2002-1 may not take this course for further credit.

**HIST 472-4 Problems in World History**

An advanced examination into the concepts and methodology of world history. Selected themes may include globalization, modernization, migration, religious expansion, colonialism, imperialism, and the teaching of world history. Prerequisite: 45 units including nine units of lower division history.

**HIST 473-4 The Making of South African Society**

An examination of the way in which South African society evolved in the 19th and 20th centuries. Particular attention will be paid to the problem of race relations. Prerequisite: 45 units including nine units of lower division history. Recommended: HIST 231, 348.

**HIST 475-3 Practicum IV**

This is the fourth term of the Co-operative Education Program. The work experience will require a high level of expertise in research and writing skills as well as an ability to exercise independent judgement. Units from this course do not count towards the units required for an SFU degree. Prerequisite: normally 105 units (including HIST 370, 375 and 470) with a minimum CGPA of 2.75. Students should apply to the co-op co-ordinator one term in advance. Students entering 400 division seminars should have an appropriate background in 100 and 200 division and/or 300 division history. Normally, students should have completed 45 units (or the equivalent) prior to enrollment in any upper division history course.

**HIST 479-4 Change, Conflict and Resistance in Twentieth-Century China**

Focuses on underprivileged and disenfranchised groups -- farmers, workers, women, ethnic minorities, etc. -- and on the mechanisms of inclusion and exclusion that structure modern Chinese society. Note that the seminar covers mainly continental China. Taiwan, Hong Kong, and the Chinese diaspora will be discussed only in passing. Prerequisite: 45 units including nine units of lower division history, including HIST 255 or 365, or permission of the department.

**HIST 485-4 Studies in History I**

Special topics. Prerequisite: 45 units including nine units of lower division history.

**HIST 486-4 Studies in History II**

Special topics. Prerequisite: 45 units including nine units of lower division history.

**HIST 489-4 Studies in History**

Allows students to pursue in greater depth a particular historical problem. It will be offered either as an individual reading course or as small seminars, depending upon student and faculty interest. Prerequisite: 45 units including nine units of lower division history. Recommended: at least three upper division courses in history.

**HIST 490-4 Studies in History**

Allows students to pursue in greater depth a particular historical problem. It will be offered either as an individual reading course or as a small seminars, depending upon student and faculty interest. Admission only by consent of instructor. Prerequisite: 45 units including nine units of lower division history. Recommended: at least three upper division courses in history.

**HIST 498-6 Honors Essay**

Written under the direction of an individual faculty member, the honors essay will reflect a familiarity with the events and literature of a particular area of study. Prerequisite: 45 units including nine units of lower division history. Students entering 400 division seminars should have an appropriate background in 100 and 200 division and/or 300 division history. Normally, students should have completed 45 units (or the equivalent) prior to enrollment in any upper division history course.

**HIST 805-5 The North American West****HIST 806-5 Themes in Canadian History****HIST 810-5 Themes in European History****HIST 812-5 History and Theory****HIST 814-5 Historical Methods****HIST 815-5 Prospectus Workshop**

Students will propose, revise, and present their thesis prospectus, in preparation for researching and writing their thesis.

**HIST 821-5 Early Modern World****HIST 822-5 Themes in British and Irish History****HIST 823-5 Modern Russia****HIST 824-5 Modern France****HIST 825-5 Modern Germany****HIST 826-5 International Relations****HIST 843-5 Themes in United States History****HIST 845-5 Themes in Latin American History****HIST 852-5 Themes in Middle Eastern History****HIST 864-5 Themes in African History****HIST 870-5 Themes in Asian History****HIST 871-5 Culture and Society in India****HIST 879-5 Environmental History**

Examines the role of the environment in history. Environmental factors can be understood both as agents of historical change and as framework within which change takes place. Environment in this sense is a continually constructed phenomena, but also an ideal around which current debates unfold.

**HIST 882-5 Oral History**

Examines the methods, theories, and epistemological issues associated with the practice of Oral History.

**HIST 883-5 Film and History**

Explores the use of film in the study of the past. Films are considered both as primary documents — that is, texts produced in the moment — and as interpretive tools that are themselves engaged in a discussion of the past.

**HIST 884-5 Science and Society****HIST 885-5 Law and Society****HIST 886-5 Migration and Settlement****HIST 887-5 Comparative Labor History****HIST 888-5 Indigenous Peoples****HIST 889-5 Colonialism/Post-Colonialism**

A trans-regional study of the colonial and post-colonial condition, focusing on the ways that colonial systems of knowledge and practices persist, albeit transformed, in societies long after formal systems of rule are ended.

**HIST 890-5 Gender and History****HIST 891-5 The French Experience in North America****HIST 892-5 Religion and Society****HIST 894-5 War and Society****HIST 895-5 Rural History****HIST 896-5 Race and Ethnicity****HIST 897-5 Supervised Readings****HIST 898-6 MA Thesis****HIST 899-6 PhD Thesis****HIST 900-6 Research Project****Humanities HUM****Faculty of Arts and Social Sciences****HUM 101W-3 Introduction to the Humanities**

An introduction to issues and concepts central to the study of the Humanities. Through exposure to primary materials drawn from different periods and disciplines, students will become acquainted with a range of topics and ideas relating to the study of human values and human experience. Writing/Breadth-Humanities.

**HUM 102W-3 Classical Mythology**

An introduction to the central myths of the Greeks and Romans. The course will investigate the nature, function, and meaning of myths in the classical world

and their considerable influence on western civilization. Writing/Breadth-Humanities.

**HUM 103-3 The Invention of the Book: Alphabets, Papyrus, Parchment, and Print**  
The book as we know it did not always exist; it was invented. This course will explore the creation and spread of writing, the emergence of scribal cultures, and the birth of the book, which came to be the greatest of all material, cultural and intellectual objects, one that shaped and transformed civilization. Breadth-Humanities.

**HUM 105-3 Western Civilization from the Ancient World to the Reformation Era**  
A study of some of the most important features of western civilization from its origins until the mid-16th century. Prerequisite: students who have taken HIST 105 prior to 2007 may not take this course for further credit. Breadth-Humanities.

**HUM 130-3 Introduction to Religious Studies**  
An introduction to concepts central to the academic study of religion exploring various relevant methodologies. Provides a framework for understanding the many ways in which humans experience the phenomenon of the sacred through symbol, ritual, doctrine and experience in a variety of religious traditions and cultures. Students who have taken HUM 230 prior to 2007 may not take this course for further credit. Breadth-Humanities

**HUM 151-3 Ancient Greek I**  
An introduction to the classical Greek language.

**HUM 152-3 Ancient Greek II**  
The continuation of Ancient Greek I. Prerequisite: HUM 151, or permission of the instructor.

**HUM 161-3 Latin I**  
An introduction to the Latin language.

**HUM 162-3 Latin II**  
The continuation of Latin I. Prerequisite: HUM 161 or permission of the instructor.

**HUM 201-3 Great Texts in the Humanities I**  
An intensive study of some of the major works which have had a formative influence on the structure and development of western thought. Reading and discussion of primary texts and the major themes which emerge from them will introduce students to essential philosophical, literary, social, and religious themes of western civilization. Texts for this course will be drawn from the Ancient World, Middle Ages and the Renaissance. Prerequisite: 30 units. Breadth-Humanities.

**HUM 202-3 Great Texts in the Humanities II**  
An intensive study of some of the major works which have had a formative influence on the structure and development of western thought. Reading and discussion of primary texts and the major themes which emerge from them will introduce students to essential philosophical, literary, social and religious themes of western civilization. Texts for this course will be drawn from the 17th century through to the modern period. Prerequisite: 30 units. Breadth-Humanities.

**HUM 203-3 Great Texts in the Humanities III**  
An introduction to classic texts which have endured as monuments of Asian thought and literature. Readings and discussions of primary texts and their central ideas will introduce students to philosophical, literary and religious themes in a selected, major Asian tradition. Prerequisite: 30 units. Breadth-Humanities.

**HUM 204-3 Great Religious Texts**  
A study of some of the key works which have had a formative influence on major religious traditions. Primary texts will be selected to illustrate core elements in the religious understanding of human life and its relationship to the sacred. Prerequisite: 30

units. HUM 130 (HUM 230 prior to 2007) is recommended.

**HUM 211-3 Art and Literature of the Italian Renaissance**  
An interdisciplinary introduction to the art and literature of the Italian Renaissance (c. 1300-c. 1500). Studies the major developments in Renaissance Italian painting, sculpture and architecture alongside some of the most influential texts of the period. Prerequisite: 30 units.

**HUM 216-3 The Ancient World**  
Aspects of the ancient history and culture of the Near East, Greece and Rome. Recommended: HUM 105 (formerly HIST 105 prior to 2007). Students who have taken HIST 216 may not take this course for further credit. Breadth-Humanities.

**HUM 219-3 The Early Middle Ages**  
An examination of Eastern and Western Christendom from Late Antiquity to the 12th-Century Renaissance emphasizing religious, political, cultural, and social change. Students who have taken HIST 219 may not take this course for further credit. Breadth-Humanities.

**HUM 240-3 Studies in Modern European Culture**  
A thematic approach to European culture through the examination of a selection from historical, literary, philosophical and/or aesthetic materials. Prerequisite: 30 units.

**HUM 301-4 Ancient Studies**  
A detailed interdisciplinary analysis of a selected topic, issue, or personality in the Ancient World. Prerequisite: 45 units. Students who have taken this course topic under HUM 382 or 383 cannot take this course for further credit.

**HUM 302W-4 The Golden Age of Greece: An Integrated Society**  
The study of Athenian society in the 5th century BC, a period unique in the record of human achievement during which virtually all the major humanistic fields were either initiated or received significant new impetus. Integrates the remarkable achievements of this 'Golden Age' in an interdisciplinary examination of its art, architecture and writings. Prerequisite: 45 units. Writing/Breadth-Humanities.

**HUM 303-4 The Latin Humanist Tradition**  
Studies in the writings of various Latin authors. Prerequisite: 45 units. Breadth-Humanities.

**HUM 305-4 Medieval Studies**  
A detailed interdisciplinary analysis of a selected topic, issue, or personality in the Middle Ages. Prerequisite: 45 units.

**HUM 307-4 Carolingian Civilization**  
A focused interdisciplinary study of the Carolingian civilization achieved in early medieval Europe under Charlemagne and his family. Prerequisite: 45 units. Breadth-Humanities.

**HUM 309-4 Literatures and the Arts Across Cultures**  
An interdisciplinary study of literary texts in translation and/or art forms across cultures and periods. Includes a variety of approaches and themes such as translation studies, narrative theory, cultural analysis, global citizenship, modernity, postmodernity. Prerequisite: 45 units. Students who have taken this topic under HUM 381 or 382 may not take this course for further credit.

**HUM 311-4 Italian Renaissance Humanism**  
A study of the major writings, cultural milieu, and influence of the humanist movement of the Italian Renaissance. Prerequisite: 45 units. Breadth-Humanities.

**HUM 312W-4 Renaissance Studies**  
A detailed interdisciplinary analysis of a selected topic, issue, or personality from the Italian and/or Northern Renaissance. Prerequisite: 45 units. Writing.

**HUM 320-4 The Humanities and Philosophy**  
An exploration of the characteristic ways in which the humanities, with its emphasis on expression, belief and tradition, presents the important philosophical concepts of western civilization. Based upon an interdisciplinary selection of texts drawn from history, philosophy, literature and the arts. Prerequisite: 45 units. Breadth-Humanities.

**HUM 321-4 The Humanities and Critical Thinking**  
A study of the counter-traditions within western civilization. Compares and contrasts diverse traditions within western culture that critique its central value systems. It will focus on the attempts of great artists and thinkers to break with tradition, and the subsequent creation of new ideas and forms of experience and expression. Prerequisite: 45 units. Breadth-Humanities.

**HUM 322-4 The Humanities and the Critique of Culture**  
Focuses on the role and practice of cultural critique in the humanities based upon a selection of materials and analytical texts across disciplines. Includes such topics as the dark side of culture and its role in establishing and maintaining relations of domination and subordination, repression and violence. Prerequisite: 45 units.

**HUM 323-4 The Humanities in Canada**  
A study of selected themes from debates in and about the humanities in Canada. Based upon a selection of texts from philosophy, literature, the arts, politics and/or the social sciences. Prerequisite: 45 units.

**HUM 325-4 The Humanities and the Natural World**  
A study of the humanistic, scientific, political, and ideological discourses deriving from concern with the natural environment. Using classic and contemporary sources, this course examines the interaction of humans with the non-human world, and includes such topics as human communities and nature, the immersion of the individual in nature, nature and the human habitat. Prerequisite: 45 units. Breadth-Humanities.

**HUM 327-4 Critical Issues in the Study of the Future**  
An exploration of central controversies and issues in the study of the future. Prerequisite: 45 units. Strongly recommended: HUM 227.

**HUM 330-4 Religion in Context**  
An in-depth investigation of a specific case of religious history and tradition. Religion will be studied through the cultural and historical contexts that pervade and structure religious meaning and expression. Prerequisite: 45 units. Breadth-Humanities.

**HUM 331-4 Studies in Asian Religions**  
Studies the history and traditions of specific Asian religions through the cultural and historical contexts that structure religious meaning. Prerequisite: 45 units.

**HUM 332-4 Mythology in Context**  
A detailed interdisciplinary study of the role of mythology within a particular culture or tradition. Prerequisite: 45 units. Recommended: HUM 102.

**HUM 340-4 Great Cities in Their Time**  
An exploration of the cultural and intellectual accomplishments of a specific city that achieved prominence in a particular time period, and had substantial impact and influence on human civilization. Examines the political, social, religious, and cultural factors that help to explain a city's



significance and investigates the achievements of its citizens. Prerequisite: 45 units.

#### **HUM 350-4 Great Figures in the Humanistic Tradition**

An interdisciplinary study of the life and works of a man or woman who has made a lasting contribution to the humanistic tradition in more than one field of endeavor (e.g. philosophy, politics, literature, economics, religion). Prerequisite: 45 units. Students who have taken this topic under another Humanities course number cannot take this course for further credit.

#### **HUM 360-4 Great Themes in the Humanistic Tradition**

An interdisciplinary study of a selected theme that has made a lasting contribution to the humanistic tradition in more than one field of endeavour (e.g. philosophy, politics, literature, economics, religion). Prerequisite: 45 units. Students who have taken a course with this content under another Humanities course may not take this course for further credit.

#### **HUM 375-4 The Woodsworth Seminar**

A special topic in the humanities to be offered by the Woodsworth chair. Prerequisite: 45 units.

#### **HUM 381-4 Selected Topics in the Humanities I**

Prerequisite: 45 units.

#### **HUM 382-4 Selected Topics in the Humanities II**

Prerequisite: 45 units.

#### **HUM 383-4 Selected Topics in the Humanities III**

Prerequisite: 45 units.

#### **HUM 385-4 Selected Topics in European Studies**

An interdisciplinary approach to a topic focusing on European thought and culture. Prerequisite: 45 units.

#### **HUM 390-4 Directed Studies in Humanities**

Prerequisite: two of any 300 division humanities courses or permission of the chair plus permission of instructor. This course may be used only once for credit towards a degree and is reserved for Humanities Major, Joint Major, Extended Minor, Minor and PBD students.

#### **HUM 400-5 Humanities Study Project**

A substantial research and writing project culminating in the completion of an essay on a humanities topic. Prerequisite: completion of 75 units which should include at least two 300 division humanities courses; the signature of a faculty member who is willing to supervise the project; approval of the humanities chair. This course may be used only once for credit towards a degree and is reserved for Humanities Major, Joint Major, Extended Minor, Minor and PBD students.

#### **HUM 471-3 Practicum I**

First term of work experience in the Humanities Co-operative Education Program. Students should apply to the Faculty of Arts and Social Sciences Co-op Education co-ordinator one term in advance. Units from this course do not count towards the units required for an SFU degree. Prerequisite: a minimum of 30 units with nine units in Humanities courses and a minimum CGPA of 2.75

#### **HUM 472-3 Practicum II**

Second term of work experience in the Humanities Co-operative Education Program. Students should apply to the Faculty of Arts and Social Sciences Co-op Education co-ordinator one term in advance. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of HUM 471, a minimum of 45 units with nine units in Humanities courses plus a minimum CGPA of 2.75.

#### **HUM 473-3 Practicum III**

Third term of work experience in the Humanities Co-operative Education Program. Students should apply to the Faculty of Arts and Social Sciences Co-op Education co-ordinator one term in advance. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of HUM 472, a minimum of 60 units with nine units in Humanities courses plus a minimum CGPA of 2.75.

#### **HUM 474-3 Practicum IV**

Fourth term of work experience in the Humanities Co-operative Education Program. Students should apply to the Faculty of Arts and Social Sciences Co-op Education co-ordinator one term in advance. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of HUM 473, a minimum of 75 units with nine units in Humanities courses plus a minimum CGPA of 2.75.

#### **HUM 495-2 Humanities Graduating Seminar**

A graduating course required for majors and joint majors, focusing on issues and texts in the humanities in the past, present and future. Prerequisite: 16 units in upper division humanities courses or permission of the department. Restricted to majors and joint majors in Humanities. Grading will be on a pass/fail basis.

## **Interactive Arts IART Faculty of Applied Sciences**

#### **IART 612-1 Multimedia Applications**

In this course students will explore multimedia applications to produce an interactive non-sequential work using graphics, sound, text, and typography. Through on-line collaborative exchanges, learners will research and analyze contemporary works and technical resources. Conceptual problem solving activities will be used in class to emphasize visual literacy and foster the development of a personal visual vocabulary.

#### **IART 898-6 MASc Project/Research Paper IART 899-6 PhD Thesis**

## **Interactive Arts and Technology Faculty of Communication, Art and Technology**

#### **IAT 100-3 Systems of Media Representation**

Systems of two dimensional, three dimensional and interactive visual representation are surveyed as they apply to both physical and digital media. Classical notions of 2D mark making and 3D linear perspective are introduced along with contemporary alternatives with digital media. Topics in interactivity include narrative concepts, color and composition as meaning, and modes of perception and reception. The course culminates with the development of an interactive time-based group project centered on multimedia, user interactions and medium of delivery. Students with credit for TECH 117, 118, 119 and 120 may not take this course for further credit. Breadth-Humanities.

#### **IAT 102-3 Graphic Design**

Introduction to fundamental design principles for visual communication. Organized as a continual interplay of theory and practice, students will examine historical, philosophical, perceptual and semiotic approaches to understanding graphic design, and will explore principles of form, such as structure and composition, hierarchy, form, color, space, scale, typography, and legibility and readability through hands-on projects. Traditional time-based and

interactive media forms will be compared and contrasted.

#### **IAT 201-3 Human-Computer Interaction and Cognition**

Introduces topics in human perception, cognition and embodied action as a foundation of design for human use. It explores the practical application of techniques for analyzing diverse interactive situations and designing effective user interfaces. Students will engage in the analysis and design of a simple user interface, gaining detailed knowledge and experience with the standard basic techniques for interface specification, prototyping and evaluation. Prerequisite: completion of 24 units.

#### **IAT 202-3 New Media Images**

Explores the computational nature of technology as applied to contemporary art and design. It is a studio-based, media production course that explores new forms of art and design that are mediated by or modeled after computing processes as opposed to transforming or digitizing existing forms. Prerequisite: Minimum of 18 units. Recommended: IAT 100. Students with credit for IAT 101, TECH 121, 122, 123 may not take this course for further credit. Students who have taken TECH 124 before January 2008 may not take this course for further credit. Breadth-Humanities.

#### **IAT 204-3 Encoding Media Practice**

Introduction to programming techniques for new media artists and designers using a visual dataflow language suitable for the rapid prototyping of expressive media systems. Programming techniques are explored within the task environment for music, speech, animation, cinema and their performance. An approach to the performative aspects of programmed media is developed through a series of composition and design projects in software across media. These projects will address the aesthetic, symbolic and poetic potentials of new media in the context of an encoded media practice.

#### **IAT 206-3 Media Across Cultures**

Introduces a discursive framework for media, design and cultural interfaces enabling students to interpret, negotiate, and engage with new media with an awareness of the significance of cultural and contextual difference. Assessment is based on written and project work. Prerequisite: completion of 18 units. Breadth-Humanities

#### **IAT 208-3 Drawing as Inquiry**

An overview of the various forms and languages of drawing as both a critical and creative research tool. Activities and projects in each unit offer opportunities to understand and apply drawing as a medium for visual thinking and conceptualization. Related social and gender concerns are investigated to contextualize figurative representations within a broader cultural framework. Students with credit for IART 216, 217 and 218 may not take this course for further credit.

#### **IAT 209-3 Critical and Creative Thinking**

Identifies characteristics of critical thinking and innovative and creative thinking, and develops a framework for discussing and understanding concepts of knowing, questioning, and developing and presenting ideas. Students learn to build an argument through rhetorical methods, explore the history and formulation of criticism, develop and formulate questions as a mechanism for constructing and supporting concept building. Students will explore the characteristics of innovation and creativity, including the importance of informational mediaries such as "opinion leaders" and "change agents." Prerequisite: minimum of 18 units. Students with credit for INTD 213, 214 and 215 may not take this course for further credit.

**IAT 209W-3 Critical and Creative Thinking**

Identifies characteristics of critical thinking and innovative and creative thinking, and develops a framework for discussing and understanding concepts of knowing, questioning, and developing and presenting ideas. Students learn to build an argument through rhetorical methods, explore the history and formulation of criticism, develop and formulate questions as a mechanism for constructing and supporting concept building. Students will explore the characteristics of innovation and creativity, including the importance of informational mediaries such as "opinion leaders" and "change agents." Prerequisite: minimum of 18 units. Students with credit for INTD 213, 214 and 215 may not take this course for further credit. Writing.

**IAT 222-3 Interactive Arts**

Introduces key concepts within contemporary digital art practices. Issues surrounding digital art will be explored through readings, the study of artworks, and the creation of their own artistic projects. Prerequisite: completion of 24 units. Students with credit for IAT 322, IAT 319, 320, or 321 cannot take this course for further credit. Breadth-Humanities

**IAT 233-3 Spatial Design**

Designing and understanding spaces used by people. The iterative process of making and criticizing, experiencing and analysing spatial form. Compositional ideas for form-making. Critical thinking applied to design. Computers are the principal medium used in this course for form-making and visualization. Prerequisite: IAT 102 or an approved course in design. IAT 102 can be taken as co-requisite from September 2008 to August 2009.

**IAT 235-3 Information Design**

Introduces theory and practice of designing visual representations of information. Students will learn to visually translate textual, numerical and evidentiary information so that it can be communicated to diverse user communities and contexts. An emphasis will be on understanding how the meaning of images can change over time and across contexts and cultures. Beginning with photographic images, interactive charts, graphs, and maps, projects progress to more complex information in media forms ranging from advanced aspects of the web to interactive 3D visualizations. The relationship between visual display is explored in relation to its technology of creation, including code and information architecture. Prerequisite: IAT 102. IAT 102 can be taken as co-requisite from September 2008 to August 2009.

**IAT 243-3 Sound Interaction**

An introduction to the acoustic and psychoacoustic properties of our sense of space as provided by sound and their digital mediation. Recording, editing and interactive audio design are introduced and used for the composition of audible spatial environments. Students learn the theory and practice of sound as it interacts with visible images and explore fundamental audio techniques for interactive audio-visual presentation. Students with credit for IAT 243, 244 and 245 may not take this course for further credit.

**IAT 244-3 Digital Photography I: Post Photography**

An introduction to digital photography and photographic image modification through the use of computer technology. Students will build skills and techniques in digital photography and image processing for digital printing, the web, and interactive multimedia. Emphasis is placed on acquiring digital photographic skills based on proficiency through the appropriate use of software and image editing tools. Image formatting possibilities are investigated, along with aesthetic/functional aspects of site navigation, design, sequence and consistency. Students with credit for IAT 222, 223 and 224 may not take this course for further credit.

**IAT 265-3 Multimedia Programming for Art and Design**

Using cases from topics such as animation, cinema, music and design, this course introduces a variety of programming tools and techniques. Practical use of multimedia scripting languages and authoring environments is covered in the context of a series of composition and design projects. Code libraries and programming techniques for specific media will be introduced. Assessment will be based on both programming and the expressive use of programs in their case context. Prerequisite: CMPT 120 (or equivalent first programming course). Students with credit for IAT 206, 207 and 208 may not take this course for further credit. Students will receive credit for one of, but not both of, CMPT 265 and IAT 265. Quantitative.

**IAT 267-3 Introduction to Technological Systems**

Introduction to the core technologies and systems used in media-rich interactive environments, including computer hardware, operating systems, input and output technologies, networking and media. The concepts will be examined by working in a high-level media programming environment. Prerequisite: CMPT 120 (or equivalent first programming course). Recommended: IAT 265 or other second year programming course. This course is equivalent to CMPT 267; students with credit for CMPT 267 may not take this course for further credit.

**IAT 309W-3 Writing for Design, Media, and Informatics**

Develops critical thinking and writing strategies adaptable to professional communications in design, media arts and technology. Prerequisite: 48 units including a lower division W course. Writing.

**IAT 312-3 Foundations of Game Design**

Examines the discipline of game design. Games are studied across three analytical frameworks: games as rules (formal system), games as play (experiential system), games as culture (social system). Includes analytical and practical exercises in game design. Prerequisite: Completion of 48 units. Students with credit for IAT 404, 405 or 406 cannot take this course for further credit.

**IAT 313-3 Narrative and New Media**

Explores the role of narrative in various media and New Media environments, from traditional linear environments and multi-linear and networked media environments. Examines the relationship of narrative elements in the light of the practice and the aesthetics of New Media. It will include an overview of New Media theorists. Prerequisite: completion of 48 units. Students with credit for IAT 325, 326, or 327 cannot take this course for further credit.

**IAT 320-3 Body Interface**

Explores ideas of embodiment, knowledge, and space within the human relationship to technology. Throughout this course, students will construct and analyze contemporary and historical models of bodily interaction with machines, understand physical practices of embodiment, and apply these concepts to representation, design, and the production of artistic interface. Prerequisite: completion of 48 units, including IAT 267, 301 or 222; students with credit for IAT 331, 332, or 333 cannot take this course for further credit.

**IAT 333-3 Interaction Design Methods**

Examines concepts of design practice and related design methods for interaction designers. Design methods include ethnography, personas, design games, role-playing, scenarios, participatory workshops, and prototyping. Prerequisite: completion of 48 units, including IAT 265. Recommended: IAT 102 or 233. Students with credit for IAT 316, 317 or 318 cannot take this course for further credit.

**IAT 334-3 Interface Design**

Provides an introduction to the art and design of human-computer interfaces, design methods, prototyping and evaluation of user interfaces. Examines issues of interactivity and its relation to human contexts and technological systems. The role of aesthetic, symbolic, affective and cultural factors will be assessed in concert with scientific and technological issues. The class is primarily focused on visual interfaces on computer monitors and hand-held devices, but culminates with considerations of increasingly physical interactions in ubiquitous environments. Prerequisite: Completion of 48 units, including IAT 235.

**IAT 335-3 Analysis of Design Situations**

Examines methods for analyzing and gathering requirements for design situations as they relate to the range of ubiquitous computing applications. Examines the conceptual frameworks for understanding human action and context in design situations. Students will review a range of methods for requirements gathering, interviews, observation, ethnographic, ethno-methodological, performance workshops and informance design techniques. Students will also study qualitative, quantitative, and interpretive modes of analysis of data and how to support design with these findings. Students will engage in a range of case-stories and projects focused on user analysis. Prerequisite: completion of 48 units, including IAT 232 and IAT 331. Recommended: IAT 302.

**IAT 336-3 Materials in Design**

Introduces material properties and performance in the context of interactive artifacts. Covers criteria for material selection, including durability, environmental effects, tactile properties, manufacturing processes, compatibility and effects of particular forms of use. Prerequisite: IAT 233 or 230.

**IAT 337-3 Representation and Fabrication**

Introduces computer-based tools for representing and fabricating designs. Covers the representation of work within a design process, the use of visualization techniques to communicate with clients, and the use of digital fabrication technology to build prototypes. Projects are chosen to highlight key representational issues in contemporary design practice. Prerequisite: IAT 233 or 230.

**IAT 338-3 Interactive Objects and Environments**

Develops programming and scripting skills for developing combined software, and hardware prototype versions of interactive objects and environments. Covers the art and design of interactive objects and environments. Methodologies emphasizing embodiment, kinesthetics and haptics are introduced by combining theory and practice. Students develop programming skills for developing working prototypes comprised of software, sensors, and hardware. Prerequisite: completion of 48 units, including IAT 233, 235 and 267, or IAT 230, 231, 232 and 204. Students with credit for IAT 313, 314 or 315 cannot take this course for further credit.

**IAT 340-3 Experimental Sound Design Studio**

Techniques in real-time audio digital signal processing appropriate for game development and virtual environments are explored including interactive speech, music and sound effects. In conjunction with a study of the theory of the interaction of sound with other media elements students will have the opportunity to pursue interests in the design of sound for moving images and the composition of dynamic, navigable and immersive aural settings embedded in 3D graphic environments. Prerequisite: Completion of 48 units, including IAT 243.

**IAT 343-3 Animation**

An introduction to techniques for 3D computer animation such as keyframing, performance

animation, procedural methods, motion capture, and simulation. The course also includes an overview of story-boarding, scene composition, lighting and sound track generation. The course will explore current research topics in computer animation such as facial animation, behavioral animation, artificial life and interactive systems. Prerequisite: minimum of 24 units, including MATH 130 or MACM 101 or MATH 151 or equivalent. Students with credit for IAT 241, or IART 219, 220 and 221 may not take this course for further credit.

#### **IAT 344-3 Moving Images**

Reviews and consolidates the fundamentals of digital video production, including camera and composition skills, the role of sound, lighting, and continuity and montage editing. Students will review and analyze works from traditional cinema and from contemporary digital video. The course will reinforce fundamental skills and extend the student's abilities to use a range of digital production, post-production, and presentation techniques. Prerequisite: minimum of 48 units and IAT 202 or 101 or other approved digital video course. Students with credit for IAT 242, IART 222, 223 and 224 may not take this course for further credit.

#### **IAT 351-3 Advanced Human-Computer Interaction**

Students will learn about and gain experience with a wide variety of interaction technologies, environments and architectures supporting user interaction with systems in work, learning and play. Applied topics may include, but are not limited to, collaboration and computers; ubiquitous and responsive environments; security, trust and privacy; networking; and distributed and heterogeneous interfaces. Emphasis is on practical experience, involving a group design/analysis project in advanced topics in human computer interaction. Prerequisite: completion of 48 units, including IAT 265 or other approved second year programming course, and IAT 201 or equivalent introductory HCI course. Strongly recommended: IAT 267.

#### **IAT 352-3 Knowledge Media Architectures**

Architectures and technologies that people use for creating, capturing, storing, sharing, and accessing knowledge and information are introduced. XML technologies, databases and data mining are reviewed as means for sharing, storing and extracting knowledge in the context of personalized systems. The server-client and service oriented architectures are examined from the perspective of building interactive systems. Internet computing and collaborative technologies, including video conferencing, chat systems, peer to peer systems, social networking, and portals are reviewed as means for creating and sharing knowledge and information. Prerequisite: completion of 48 units, including IAT 265 or other approved second year programming course.

#### **IAT 355-3 Introduction to Visual Analytics**

Focuses on the design and implementation of interactive computer visualization techniques for the analysis, comprehension, and explanation of large collections of abstract information. The application of principles from perception, information visualization, interaction and visual analytics will be covered. Introduces tools for programming geometric information and displaying the results. Emphasizes development of practical skills in using graphics libraries and tools: students will develop programming experience with relevant examples and techniques. Prerequisite: IAT 201 and IAT 267 and either IAT 265 or CMPT 225 or other approved second year programming course. Recommended: IAT 235.

#### **IAT 380-3 Special Topics in Interactive Arts and Technology (Arts)**

Specific details of courses to be offered will be published prior to registration each semester. Prerequisite: 48 units and permission of the School.

#### **IAT 381-3 Special Topics in Interactive Arts and Technology (Science)**

Specific details of courses to be offered will be published prior to registration each semester. Prerequisite: 48 units and permission of the School.

#### **IAT 386-3 Directed Studies**

Independent reading and research topics selected in consultation with individual members of the SIAT faculty. Prerequisite: Completion of 48 units, and permission of the instructor and of the School is required. No more than 6 units of Directed Studies may be taken.

#### **IAT 387-3 Directed Studies**

Independent reading and research topics selected in consultation with individual members of the SIAT faculty. Prerequisite: Completion of 48 units, and permission of the School and the instructor is required. No more than 6 units of Directed Studies may be taken.

#### **IAT 391-3 Italian Design History**

Part of the 9-12 Credit ItaliaDesign Field School curriculum. The first course of four is taught in Vancouver five weeks prior to departure for Italy. Students prepare research plans for use once they arrive at each of four destinations (Rome, Tuscany, Florence, Milan). The course covers histories of city planning, architecture and urban design in these venues that live on in contemporary Italian design. Field school instruction is in three phases: (1) Vancouver: methodology and preparatory research work; (2) field study on-site in Italy, and upon return to Vancouver; (3) synthesis and writing-up of research and final arguments. This course fulfills the first phase. All projects will be available for viewing at the ItaliaDesign Field School public website. Students will also present their work to a live audience. Prerequisite: completion of 48 units. Corequisite: IAT 392/IAT 393 (ItaliaDesign Field School).

#### **IAT 392-3 Italian Design in Context: Learning from La Citta**

Part of the 9-12 Credit ItaliaDesign Field School curriculum. Field school instruction is in three phases: (1) Vancouver: methodology and preparatory research work; (2) field study on-site in Italy, and upon return to Vancouver; (3) synthesis and writing-up of research and final arguments. This course fulfills one half of phase 2 fieldwork in Italy. Student work is primarily in Rome and the hill towns of Tuscany and Florence. It requires using design and social science field methodologies to organize observations made of daily life and its expression in cultural patterns. Pattern "languages" provide a taxonomy, linking prior scholarship to student field work. This work in turn provides historical roots to understanding contemporary Italian design and design industry. Prerequisite: completion of 48 units. Corequisite: IAT 391/IAT 393 (ItaliaDesign Field School).

#### **IAT 393-3 Interaction Design Workshop I**

Involves a sequential series of projects based on field studies in Florence and Milan. Students are required to examine and interpret the impact of design on Italian life and culture in each designated centre. The field studies are supported by a series of in-situ lectures to provide a context for further reflection. Minor independent projects are completed in Florence and Milan followed by a major collaborative project focusing on an interpretation and reflection of the impact of design on life in Italy. Prerequisite: completion of 48 units. Corequisite: IAT 391/392 (ItaliaDesign Field School).

#### **IAT 394-3 Interaction Design Workshop II**

An optional fourth course and directed study. Participants must receive approval for their topics from the Field School instruction team prior to departure to Italy. Students can work individually or in teams on research or applied projects. Research must contribute to the ongoing ItaliaDesign repository. Projects focus on furthering knowledge of Italian Design and Innovation practices and extending the course concepts. Prerequisite: Completion of 48 units, including IAT 391, 392 and 393.

#### **IAT 402-3 Interdisciplinary Design Studio I (Science)**

Covers the spectrum of the production process from problem definition to prototype. Emphasis is on the implementation and evaluation of the technical systems entailed by the project. Teams may be formed with students concurrently enrolled in IAT 403. Students continue working on the project in the follow-up course IAT 404. Students may not concurrently enrol in IAT 402 and 403. Prerequisite: for SIAT majors — completion of 63 units including upper division writing course and SIAT BSc lower division requirements plus nine upper division IAT units; for SIAT Joint Majors — 63 units including upper division writing course and specified lower division requirements plus nine upper division IAT units; for non-SIAT Majors — special permission of the instructor. Students with credit for IAT 400, INTD 401, 402, 403, 404, 405 or 406 cannot take this course for further credit. Recommended: IAT 404 in the subsequent semester.

#### **IAT 403-3 Interdisciplinary Design Studio I (Arts)**

Development and evaluation of a media, design or informatics project. Projects vary from year to year and relate to current social and technological issues in society as well as students' interests and affinities. Design methods used will vary with project type. Covers the spectrum of the production process from problem definition to prototype. Teams may be formed with students concurrently enrolled in IAT 402. Students continue working on the project in the follow-up course IAT 405. Students may not concurrently enrol in IAT 402 and 403. Prerequisite: for SIAT Majors — completion of 63 units including upper division writing course and SIAT BA lower division requirements plus nine upper division IAT units; for SIAT Joint Majors — 63 units including upper division writing course and specified lower division requirements plus nine upper division IAT units; for non-SIAT Majors — special permission of the instructor. Students with credit for IAT 400, INTD 401, 402, 403, 404, 405, or 406 cannot take this course for further credit. Recommended: IAT 405 in the subsequent semester.

#### **IAT 404-3 Interdisciplinary Design Studio II (Science)**

Development and evaluation of a media, design or informatics project. The actual projects vary from year to year and relate to current social and technological issues in society as well as students' interests and affinities. Design methods used will vary with project type. Covers the spectrum of the production process from problem definition to prototype. Teams may be formed with students concurrently enrolled in IAT 405. Students may not concurrently enrol in IAT 404 and 405. Prerequisite: IAT 402.

#### **IAT 405-3 Interdisciplinary Design Studio II (Arts)**

Development and evaluation of a media, design or informatics project. The project is a continuation of the project started in IAT 403. The actual projects vary from year to year and relate to current social and technological issues in society as well as students' interests and affinities. Design methods used will vary with project type. Covers the spectrum of the

production process from problem definition to prototype. Teams may be formed with students concurrently enrolled in IAT 404. Students may not concurrently enrol in IAT 404 and 405. Prerequisite: IAT 403.

#### **IAT 410-3 Advanced Game Design**

Students will design and develop a variety of electronic games, culminating in an advanced game project. They will continue to analyze the experience of play within the game, and the connections between the game experience and broader cultural phenomena. Prerequisite: completion of 63 units, including IAT 265 or equivalent programming course. Students with credit for IAT 404, 405 or 406 cannot take this course for further credit. Strongly recommended: IAT 312.

#### **IAT 431-3 Speculative Design**

Provides students with the opportunity to experiment with designing in various non-normative frameworks provided by cultural studies, critical theory and phenomenology. Students will examine design's potential for cultural, social and ethical critique of emerging technologies and society. Rather than merely illustrating theoretical positions, this examination involves enacting and embodying differing theoretical positions, thereby rendering criticism productive. Individual design expertise and voice is emphasized. Prerequisite: completion of 63 units.

#### **IAT 432-3 Design Evaluation**

Examines evaluation concepts and methods for designers. Introduces a range of evaluation approaches including informal usability studies, lab experiments, field studies, and analytically-based evaluations. Students will explore techniques for feedback including usability tests, observation, interviews, heuristic reviews, and discursive evaluations. Underlying concepts of evaluation including scientific experimentation, ethnography, phenomenology, and aesthetics will be discussed. Students will learn how to design and implement appropriate evaluation studies for a range of design projects. Prerequisite: completion of 63 units. Recommended: IAT 201 and 235. Students with credit for IAT 332 may not take this course for further credit.

#### **IAT 443-3 Interactive Video**

An intermediate level investigation of interactivity explored through media, in the context of current display technologies relevant to Interactive Arts and Design. Examines recombinant, computational and compositional structures related to image, sound and video. Students explore video within technologies ranging from cell phones and mobile locative media, and hand held and wearable devices, to 3D immersive virtual and/or networked environments, video art installations, multiple scales of display technology, and responsive spaces. Students will design, produce and critically appraise work. Prerequisite: IAT 344 or 242.

#### **IAT 445-3 Immersive Environments**

Introduces advanced 3D computer animation and virtual world building techniques. Integrates hands-on fundamentals with design praxis and theoretical and research concerns. Fundamentals are complemented with examples from current research and design praxis. The studio aspect of the course will include assignments focusing on specific animation and behaviour modeling techniques and a team-based design project. Prerequisite: IAT 343 or 241. Students with credit for IAT 416, 417, or 418 cannot take this course for further credit.

#### **IAT 451-3 Design of Ubiquitous Environments**

Ubiquitous environments are those in which information and control services are available for casual use. The design of such environments requires in-depth understanding of patterns of use, user-centred design processes and knowledge of

enabling technologies. This course covers all three areas, with particular emphasis on how technologies enable human action. The well-known example of a smart house is used to motivate and demonstrate how ubiquity can act as a design principle. Prerequisite: Completion of 48 units, including CMPT 225.

#### **IAT 452-3 Developing Design Tools**

Introduces approaches to customizing and developing software applications as design-support tools to be employed in dynamic design environments comprising people, other tools, and their interactions in relation to the tasks to be performed. Discusses effective strategies for software development to find the best matching solutions for a given situation and applies the select methods in software design, prototyping, and evaluation. Makes use of software development processes, languages, and notations in representing design of the tools being developed. Experiments with contemporary systems such as drafting tools (CAD), authoring applications (for games, Websites, animations), parametric design-modeling systems, etc.; and searches their potentials to enhance design environments. Prerequisite: completion of 48 units, including IAT 351.

#### **IAT 455-3 Computational Media**

The representation of media is introduced: specifically one dimensional (sound), two dimensional (images) and three dimensional (moving images). This course focuses on techniques and methods for creating digital video special effects, allowing students to explore their creativity while extending their graphics and programming skills in digital media. Computational techniques based on signal processing are developed that support the creation, manipulation, combination, transformation, compression, storage and display/performance of different media forms. An important aspect is representation in the temporal/spatial vs. the frequency domain and different transformation techniques. Students will be required to generate special effects, critique and analyze effects from movies, develop skills and abilities to manipulate digital video and audio, and implement their own algorithms to express their technical and artistic skills. Prerequisite: IAT 265 and MACM 101. Recommended: MATH 151 or equivalent.

#### **IAT 480-3 Special Topics in Interactive Arts and Technology**

Specific details of courses to be offered will be published prior to enrolment each term. Prerequisite: Completion of 69 units and permission of the School

#### **IAT 481-3 Special Topics in Interactive Arts and Technology (Science)**

Specific details of courses to be offered will be published prior to enrolment each term. Prerequisite: Completion of 69 units and permission of the instructor.

#### **IAT 482-3 Special Topics in Performance and Media Arts**

Specific details of courses to be offered will be published prior to enrolment each term. Prerequisite: completion of 69 units and permission of the instructor.

#### **IAT 483-3 Special Topics in New Media Environments**

Specific details of courses to be offered will be published prior to enrolment each term. Prerequisite: Completion of 69 units and permission of the instructor.

#### **IAT 484-3 Special Topics in Technology in Art and Design**

Specific details of courses to be offered will be published prior to enrolment each term. Prerequisite:

Completion of 69 units and permission of the instructor.

#### **IAT 485-3 Special Topics in Interactive Design**

Specific details of courses to be offered will be published prior to enrolment each term. Prerequisite: Completion of 69 units and permission of the instructor.

#### **IAT 486-487-3 Directed Studies**

Independent reading and research topics selected in consultation with individual members of the SIAT faculty. Prerequisite: Completion of 69 units, and permission of the instructor and School are required. No more than 6 units of Directed Studies may be taken.

#### **IAT 488-1 Directed Studies**

Independent reading and research topics selected in consultation with individual members of the IAT faculty. Prerequisite: completion of 69 units. No more than six units of Directed Studies may be taken, and permission of the instructor and school are required.

#### **IAT 490-6 Honors Project Proposal**

Preparation for Honors Thesis Project including literature review, ethics approval (if necessary), and presentation of work in progress at end of the term. Prerequisite: Students accepted into Honors Program only.

#### **IAT 491-6 Honors Project**

Intensive work related to a particular topic in the field of Interactive Arts and Technology. Involves an extensive individual project under direct supervision of at least two committee members (at least one of whom is a SIAT faculty member) who will provide guidance and critical feedback as necessary. Prerequisite: Successful completion of IAT 490.

#### **IAT 800-3 Foundations of Computational Art and Design**

Aims at a robust understanding of models for art and design and representations of these models as symbol systems. It meets these aims through a set of case studies that demonstrate how computational thinking can affect professional and research outcomes. Its outcomes are preparedness for further relevant study and developing skill in using computers to support research and professional work in art and design.

#### **IAT 801-3 Qualitative Research Methods and Design**

An introduction to qualitative research practices. Covers structures of research that are prevalent across and at the intersection of the areas of art, design, media, human-computer interaction and information studies, introduces research methodologies and tools, and teaches methods for interdisciplinary work. This course will foster a critical discourse among differences in approaches to research.

#### **IAT 802-3 Quantitative Research Methods and Design**

Introduction to the research enterprise from a quantitative perspective. It covers structures of research that are prevalent across fields, introduces research methodologies and tools, teaches methods for interdisciplinary work and fosters a critical discourse around differences among research in different areas. Prerequisite: Graduate student status.

#### **IAT 805-0 Research Colloquium**

Through an interdisciplinary speaker series, presents research topics relevant to the SIAT graduate program. Engages students in discussion and debate on the utility, results and methods of research. Prerequisite: Enrolment in the SIAT graduate program.

#### **IAT 810-3 New Media**

Theory, history and current research in the field of new media. Its methods are the interweaving of

design, social/cultural, learning and aesthetic theories. Historical views of the field are provided through an analysis of the histories of technology, moments of media emergence, social and cultural movements, design and aesthetics. Outcomes are exploration, analysis and development of applied methods in order to better understand, design, create and assess new media and future “newer media” developments.

#### **IAT 811-3 Computational Poetics**

The theory and practice of metacreation, i.e. the design of generative and pro-active computer software endowed with creative behaviour is presented. Tools and techniques from artificial intelligence, artificial life and machine learning are introduced and exemplified through their application in previous artistic works. The interweaving of related theoretical and practical issues situates metacreation within a larger perspective on art, science and technology.

#### **IAT 812-3 Cognition, Learning and Collaboration**

Addresses what it means to know something, how people gain and use knowledge and complex skills, how to determine what an individual knows, how humans learn, how humans solve complex problems, how knowledge is created within a social and group context, and how to model human capabilities and performance. It selects and studies theoretical perspectives that inform the design of computer-based mediated environments, products and experiences.

#### **IAT 813-3 Artificial Intelligence in Computational Art and Design**

Applications of computational intelligence to art and design are introduced through a set of motivating examples. Specific areas of application include knowledge representation, problem solving, rule based systems, ontologies and statistical reasoning.

#### **IAT 814-3 Knowledge, Visualization and Communication**

Provides a cognitive and computational framework for understanding and designing graphical and visual representations. Investigates several psychological and computational models of diagram processing, and explores diverse interactive graphical systems.

#### **IAT 830-3 Learning Design and Media**

Students will gain an understanding of instructional design as an evolving set of theories and practices based on learning research. They will develop detailed knowledge of design strategies for interactive learning media and will be able to explain how they relate to cognitive theories of learning. As an overarching goal, students will develop the knowledge and skills to conduct basic research projects relating to the design of learning media.

#### **IAT 831-3 Encoding Media Practice**

Studies conceptual, aesthetic, and computational issues and techniques involved in the encoding of interactive media objects. It includes study of theoretical and poetical backgrounds in computer-human interaction (Bush, Dinkla, De Landa, Grosz, Deleuze, Manovich, Murray, Laske, Hamman, Ascott, Penny, Kahn), basic tenets of programming for the arts (media representations, practical machine perception, algorithmic processes, database strategies, display techniques), and practical exercises in programming interactive computer art that may include interactive cinema, audio and narrative.

#### **IAT 832-3 Exploring Interactivity**

Analyses, designs and prototypes more effective and more appropriate products and systems to support interactivity. This course will examine these issues through an iterative modeling process.

#### **IAT 833-3 Embodiment and Electronic Performance**

Combines theoretical and practical explorations of physicality and live performance in technologically mediated environments. It offers an introduction to phenomenology as a methodology for analyzing and elaborating new physical and technological hybrids. Students devise a performance experiment, while simultaneously exploring critical discourses around embodiment, virtuality, gender, and communication. This course is designated as a research methods course.

#### **IAT 834-3 Mixed Methods in Design Research**

A range of ways of knowing and inquiring in design research are explored by providing comparisons of different traditions appropriate for empirical mixed method design evaluations. This is a second research methods course. Prerequisite: One research methods course, either quantitative or qualitative. Students who received credit for this course when offered as IAT 888 Special Topics in Spring 2007 cannot take this course for further credit.

#### **IAT 835-3 Sustainable Interaction Design**

Sustainable interaction design (SID) examines the role of design in digital artifacts that support environmental sustainability. SID considers digital artifacts with respect to recycling, reuse, and renewal. The aim of the course is to introduce and understand SID concepts, research, and practice.

#### **IAT 840-3 Models of Networked Practice**

Examines several social frameworks for describing mutual activity in work and learning particularly in computer supported networked environments. The frameworks are used to describe, analyze and design the tools and approaches for new communities of practice. This course is designated as a research methods course.

#### **IAT 842-3 Theory and Design of Games**

Games have become a major part of our culture, rivaling the popularity of movies. Drawing on a wide variety of examples and disciplines, this course examines theories and techniques for the analysis of existing games, and the design of new ones. It studies game design, and will provide students with the conceptual and technical tools necessary to critique and design games of all kinds.

#### **IAT 844-3 Spatial Computing**

Covers the concepts, algorithms and design principles underlying modern 3D computer animation and visualization from a user interface perspective. Research topics include 3D user interface constructs; information, data and knowledge visualization; 3D graphics and animation; spatial perception; and virtual and immersive environments.

#### **IAT 845-3 Methods for Research into Technological Systems**

Key models of research into technological systems are analysed and compared. Together, they frame diverse methodologies for art, social science, business, engineering and information technology. Focus will vary by instructor and disciplinary combination being examined. In contrast to the Research Methods and Strategies Course, this offering considers specialized, discipline specific research tools taken in combination. These may be qualitative, quantitative, laboratory-based, field based (as in survey research), actively experimental or based on secondary analysis of archival data. This course is designated as a research methods course.

#### **IAT 846-3 Interactive Systems for Design**

Introduces students to the design of computational systems that themselves support the design process. Prerequisite: IAT 800.

#### **IAT 861-0 Practicum I**

#### **IAT 862-0 Practicum II**

#### **IAT 871-3 Directed Readings I**

#### **IAT 872-3 Directed Readings II**

#### **IAT 873-3 Directed Readings III**

#### **IAT 881-3 Special Topics I**

#### **IAT 882-3 Special Topics II**

#### **IAT 883-3 Special Topics III**

#### **IAT 884-3 Special Topics IV**

#### **IAT 885-3 Special Topics V**

#### **IAT 886-3 Special Topics VI**

#### **IAT 887-3 Special Topics VII**

#### **IAT 888-3 Special Topics VIII**

#### **IAT 897-6 MA Thesis**

Students who are working on their Master of Arts thesis enrol in this course. This course will not count towards the course work requirements.

#### **IAT 898-6 MSc Thesis**

Students who are working on their Master of Science thesis enrol in this course. This course will not count towards the course work requirements.

#### **IAT 899-6 PhD Dissertation**

Students who are working on their PhD dissertation enrol in this course. This course will not count towards the course work requirements. PhD candidate status is neither required for nor implied by enrolment in this course.

## **International Leadership MIL Faculty of Arts and Social Sciences**

#### **MIL 800-5 Research Methods**

This course will develop understanding of research design from theoretical, analytical, and practical standpoints and provide hands-on experience in a range of social science research techniques. It is designed to prepare MIL students to conduct original, independent research for their internship projects and in their future careers. Greater emphasis will be placed on qualitative than on quantitative research methods.

#### **MIL 801-5 International Financial Policy**

An advanced course designed to introduce graduate students to international finance issues from a policy perspective. The general orientation of the course is that of the international political economy of finance. From a strong and practical knowledge base, students will be able then to begin to look at applied problems in either Latin America or Asia.

#### **MIL 802-5 Regional Focus: Asia**

Provides an outline of the main elements to be engaged in interpreting Asia. This course focuses on historical and philosophical issues relating to the understanding of Asia in the context of contemporary global issues.

#### **MIL 803-5 Regional Focus: Latin America**

Provides an outline of the main elements to be engaged in interpreting Latin America. This course focuses on historical and philosophical issues relating to the understanding of Latin America in the context of contemporary global issues.

#### **MIL 804-5 Directed Readings I**

#### **MIL 805-5 Directed Readings II**

#### **MIL 806-3 Internship I**

All students in the Master's program in International Leadership will undertake a year long internship. The work they undertake must be of sufficient depth and breadth to allow the student the opportunity to demonstrate his or her acquired knowledge and skills. Students will be required to produce a work report, which will be an appraisal of the student's work experience. Graded S/U.

#### **MIL 807-3 Internship II**

#### **MIL 808-6 Internship Project**

Students complete their internship project and work with their supervisory committee to bring it to a final acceptable form.

**MIL 809-3 Internship Project Completion**

Students will continue to complete their internship project and work with their supervisory committee to bring it to a final acceptable form. Prerequisite: MIL 808.

## International Studies IS

### Faculty of Arts and Social Sciences

**IS 101-3 Introduction to International Studies: Studying Global Conflict and Co-operation**

Introduces international studies historically, tracing the patterns of conflicts and co-operation between nations, states and social groups in the world of the last half of the twentieth century and into the twenty-first. Examines important problems in the contemporary world from the perspectives of different social science disciplines: poverty and development aid; war; and environmental change. Considers the challenge of global governance. Breadth-Social Sciences.

**IS 200-3 Historical Perspectives on Diplomatic Relations, International Security and Law**

An introduction to the study of diplomacy, security and the development of international law. Emphasis will be on the 19th and 20th centuries, preceded by a general survey of early notions of sovereignty, concepts of total war and primitive diplomatic institutions, as well as the role of religion in politics. Prerequisite: IS 101, or permission of the department.

**IS 210-3 Comparative World Politics: Trajectories, Regimes, Challenges**

Introduces students to the variety of systems of governance in the world today, examines the historical and cultural sources of their different developmental trajectories, and assesses the challenges they face in the future. Prerequisite: IS 101 or consent of the department. Breadth-Social Sciences.

**IS 220-3 Wealth and Poverty of Nations**

Introduces students to the basics of international economics. Topics are drawn from both international trade: the gains from trade, the consequences to impediments to trade and factor mobility; and from international macroeconomics: the basic Mundell-Fleming framework; understanding the role of international organizations like the IMF, World Bank and BIS, and a case study of the European Union and its common currency. Prerequisite: IS 101 and ECON 105. Students with credit for INTS 220 may not take this course for further credit.

**IS 230-3 Transnationalism and Society**

Provides a survey of the basic issues relating to the study of transnationalism and society. Topics covered include identity and ethnicity, urbanization, migration, social networks, politics, and religion. Prerequisite: IS 101 or permission of the department. Breadth-Social Sciences.

**IS 231-3 Introduction to South Asia**

Provides an introduction to religion, culture and society in South Asia, primarily from the perspective of social and cultural anthropology, developing specialization in the region. Prerequisite: IS 101 or permission of the department.

**IS 232-3 Introduction to Southeast Asia**

Provides an introduction to religion, culture and society in Southeast Asia, primarily from the perspective of social and cultural anthropology, developing specialization in the region. Prerequisite: IS 101 or permission of the department. Breadth-Social Sciences.

**IS 240-3 Research Methods in International Studies**

Provides an introduction to the research enterprise in international studies with a particular focus on

quantitative methods. Prerequisite: 12 units. Students who have taken POL 201 or SA 255 may not take IS 240 for further credit. Quantitative.

**IS 302-4 Introduction to Humanitarian Intervention**

Investigates complex emergencies and the outcomes of conflict, specifically forced migration by refugees and internally displaced people (IDPs). Prerequisite: IS 200 and 45 units.

**IS 303-4 Ethnic Minorities, Identity Politics, and Conflict in Southeast Asia**

Surveys the ethnic minorities of Southeast Asia, focusing on their relations with other ethnic groups, especially majority populations, and governments. Examines the treatment of ethnic minorities and the responses of the minorities, including ethnic-based secession movements. Reviews cross-border and broader international issues relating to minorities, such as their status as refugees and cross-border support for insurgencies. Prerequisite: IS 200 and 45 units.

**IS 304-4 Russian Foreign Policies and Security Policies**

Introduces the Russian Federation's foreign and security policies. Reviews key actors, institutions, and stages in the development of Russian foreign policy development as well as the gap between rhetoric and realities in Russian foreign policy. Prerequisite: IS 200 and 45 units.

**IS 311-4 Democratic Transition in Comparative Perspective**

Examines factors influencing democratic tradition and consolidation in different regional settings comparatively, and explores the complex factors that influence the process of democratization. Analyzes the domestic and external conditions (cultural, social, economic, and political) that historically and recently have fostered or impeded the maintenance of democracy, particularly in post-conflict environments, 'new states,' and states challenged by the decay or collapse of traditional authoritarian forms of rule. Prerequisite: IS 200 or 210, and 45 units.

**IS 312-4 Europe: Undivided but Plural**

Explores political development in Europe from a comparative perspective, including an examination of the political institutions and dynamics of both West European and Eastern European states, and the role played by the European Union (EU) as an integrating and transformative factor in the politics of Europe. Prerequisite: IS 210, one of IS 200, 220 or 230, or permission of the department.

**IS 313-4 Nationalism, Democracy and Development in Modern India**

An examination of the differing narratives of nation and modernity in the struggle for independence from colonial rule in India, and their implications for the post-colonial state, for politics and for India's economic development. Prerequisite: IS 210 and 45 units. Recommended: IS 231.

**IS 313W-4 Nationalism, Democracy and Development in Modern India**

An examination of the differing narratives of nation and modernity in the struggle for independence from colonial rule in India, and their implications for the post-colonial state, for politics and for India's economic development. Prerequisite: IS 210 and 45 units. Recommended: IS 231. Writing.

**IS 314-4 National, Regional, and International Politics in Southeast Asia**

Provides an overview of national and political issues in Southeast Asia. Surveying politics in individual countries and regional political institutions, focus is given to particular themes such as democratization and civil society, communism and other forms of authoritarianism, the role of the military, decentralization, religion and politics, the impact of

China on the region, and security concerns. Prerequisite: IS 210 and 45 units.

**IS 315-4 Introduction to Middle East Politics**

Introduces the political, economic, and ideological dynamics of contemporary Middle Eastern states. Examines the legacy of colonialism, state formation, central ideological trends such as Arab nationalism and political Islam, the dynamics of state-society contention, and the challenges of economic development. Prerequisite: HIST 151 and 45 units. Students who have taken IS 419 under this topic may not take this course for further credit.

**IS 320-4 Selected Problems in the International Economy**

Introduces students to selected problems in the international economy. Topics are drawn from both international trade and international macroeconomics. Agricultural subsidies, tariffs and quotas, the Multi-fiber Agreement, the evolution of the world's airline industries, and the "brain drain" are of interest. Macroeconomics topics include the theory and evidence associated with currency crises, economic integration including understanding the NAFTA, the EU and German reunification and, more speculatively, the potential for Korean unification. Why economic growth is successful in some countries and not others will round out the topics. Prerequisite: IS 220 and 45 units; ECON 342 or ECON 345. Students with credit for INTS 320 may not take this course for further credit.

**IS 400-4 State Building and State Failure: Comparative Perspectives**

Challenges posed by state failure and fragility, and the tasks of reconstructing or building viable states, involve critical security dimensions that are of both a military and non-military nature. The issues of security, development, stabilization and democratization are inextricably linked. Exploration of the extensive body of literature on state formation and decay in various regional settings with an emphasis on the causes of state failure, and the prospects of state rebuilding. Prerequisite: IS 200 and 45 units.

**IS 402-4 The Great Game: International Politics in Asia in Historical Perspective**

Examines the causes and impact of the Great Game on Asia as well as on the international relations of the major imperial powers. Due to multi-state region covered by the subject matter, the approach will be thematic and comparative. Prerequisite: IS 200, and one of IS 210, 220 or 230, and eight upper division units within stream 1, or permission of the department.

**IS 403-4 Gender, Conflict and Nationalism**

Provides a survey of social, economic and political relations at the intersection of gender and nationalism. Both theories and practices of nationalism are explored and their gender implications probed in historical perspective. Feminist perspectives of nationalism and related conflict are also explored, focusing on specific sites and scales of nationalism: the state, the home, and the body. From nationalism in a colonial context to contemporary liberation movements, the gendered politics of dissidence and territory are examined. Prerequisite: IS 200, and one of IS 210, 220 or 230, and eight upper division units within stream 1, or permission of the department.

**IS 406-4 Selected Topics – Complex Emergencies**

Explores the background, dynamics, and outcomes of complex humanitarian emergencies generated by widespread violence and national catastrophes, drawing on country and regional case studies of international intervention to implement post-conflict and post-disaster recovery. Prerequisite: IS 200 and 45 units.

**IS 407-4 Selected Topics – Terrorism**

Considers the national and international impact of terror and terrorist organizations both in historical context and as a function of current events.

Prerequisite: IS 200 and 45 units.

**IS 408-4 Directed Readings I**

Independent research in a selected international studies area, under the supervision of at least one faculty member. A research report is required.

Prerequisite: by application to the undergraduate chair. May only be taken once for credit towards a degree or diploma.

**IS 409-4 Special Topics I**

Specific details of courses to be offered will be published prior to enrolment each term. Prerequisite: IS 200 and 45 units.

**IS 410-4 Politics, Institutions and Development**

The quality of institutions' exercises a crucial influence on the prospects for development. Aims are to interrogate this claim through analysis of different paths of economic growth and change across the developing world. Examination of the ways in which politics influences economic growth and distribution; the relationships between political systems and patterns of development; and the politics of institutions and state formation. Prerequisite: IS 210 and 45 units.

**IS 412-4 Central Asia, the Transcaucasus and Russia: Democracy, Development and Conflicts**

Examines the new states of post-Soviet Central Asia, the Transcaucasus and Russia, with particular reference to the relationship among democratization, development, autocracy and conflict, and the role of external actors in transnational security issues in the region. Prerequisite: IS 200 or 210, and 45 units.

**IS 415-4 Islamist Trend in Middle East Politics**

Focuses upon the political Islamist movements that have swept much of the Middle East and North Africa since the mid-1970s. Examines a broad range of movements, from liberal to militant trends, drawing on the experiences of countries throughout the region. Prerequisite: HIST 151 and 45 units. Recommended: IS 315. Students who have taken IS 419 under this topic may not take this course for further credit.

**IS 418-4 Directed Readings II**

Independent research in a selected international studies area, under the supervision of at least one faculty member. A research report is required. Prerequisite: by application to the undergraduate chair. May only be taken once for credit towards a degree or diploma.

**IS 419-4 Special Topics II**

Specific details of courses to be offered will be published prior to enrolment each term. Prerequisite: IS 210 and 45 units.

**IS 421-4 The Economics of International Organizations and Development**

Develops an understanding of the interactions between international organizations, economic theory, and implementation of economic policies. Explores as well the impact of their interventions in some chosen countries. Prerequisite: IS 220, and one of IS 210, 200 or 230, and eight upper division units within stream 3; or permission of the department.

**IS 427-4 Selected Topics – Globalization, Poverty and Inequality**

Examines evidence and argument on the economic consequences of globalization, with regard to growth and to trends in equality/inequality, and to poverty; and considers the conceptualization and measurement of poverty, its causes and dynamics, and public policy for poverty reduction. Prerequisite: IS 220 and 45 units.

**IS 428-4 Directed Readings III**

Independent research in a selected international studies area, under the supervision of at least one faculty member. A research report is required.

Prerequisite: by application to the undergraduate chair. May only be taken once for credit towards a degree or diploma.

**IS 429-4 Special Topics III**

Specific details of courses to be offered will be published prior to enrolment each term. Prerequisite: IS 220 and 45 units.

**IS 450-4 Seminar on Global Problems in Interdisciplinary Perspective**

An interdisciplinary course which aims to bring together different disciplinary perspectives on international affairs through the study of in-depth particular contemporary problems. Prerequisite: International Studies major or honors students. Eight upper division units.

**IS 450W-4 Seminar on Global Problems in Interdisciplinary Perspective**

An interdisciplinary course which aims to bring together different disciplinary perspectives on international affairs through the study of in-depth particular contemporary problems. Prerequisite: International Studies major or honors students. Eight upper division units. Writing.

**IS 451-4 Seminar on Core Texts in International Studies**

An interdisciplinary course which aims to bring together different disciplinary perspectives on international affairs through the study of influential texts which, between them, involve study of core themes to the program: development, governance and civil society, war and peace, human rights and questions of culture and ethnicity. Prerequisite: International Studies major or honors students. Eight upper division units.

**IS 451W-4 Seminar on Core Texts in International Studies**

An interdisciplinary course which aims to bring together different disciplinary perspectives on international affairs through the study of influential texts which, between them, involve study of core themes to the program: development, governance and civil society, war and peace, human rights and questions of culture and ethnicity. Prerequisite: International Studies major or honors students. Eight upper division units. Writing.

**IS 452-4 Special Topics – Field School I**

A multidisciplinary study of a selected country or region. Prerequisite: completion of 45 units and permission of the department.

**IS 490-4 Honors Seminar**

Intended for the research and preparation of materials for the honors graduating essay. Prerequisite: Admission is by permission of the instructor and the School. Students must complete this course before taking IS 499. Open only to students who have been accepted into the honors program.

**IS 499-5 Honors Essay**

In addition to regular meetings with their supervisors, students will be required to submit a major paper on a topic to be selected in consultation with the School. Prerequisite: IS 490. Admission is by permission of the instructor and the School. Open only to students who have been accepted into the honors program.

**IS 800-4 Problems in International Development Policy and Practice**

An inter-disciplinary course which aims to bring together different disciplinary perspectives on problems of policy and practice in international development. The particular problems taken up will be changed over time, with current events. Prerequisite: graduate students enrolled in the MA in International Studies, or permission of the instructor.

**IS 801-4 Institutions, Policies and Development**

'The quality of institutions' is now said to exercise a crucial influence on the prospects for development, and the course interrogates this claim both through analysis of different paths of economic growth and change across the developing world, and in regard to public administration and development management. It examines development policies and institutional theories, the politics of institutions and state formation, and the relationships between political systems, institutions and patterns of development. Prerequisite: graduate students enrolled in the MA in International Studies, or permission of the instructor.

**IS 802-4 Directed Readings A**

Examines the historical political economy of development. Prerequisite: graduate students enrolled in Stream A of the MA in International Studies, or permission of the instructor.

**IS 803-4 Economics of International Organizations and Development**

Aims at providing a comprehensive understanding of the mandate and role of a selection of International Organizations with economically driven mandate and their impact on international and national economic issues in developing economies. Policies that involve the joint interaction of government, civil society and international organizations are studied in the light of economic theory, and their implementations within the organizations' respective mandates are analysed. Prerequisite: students enrolled in Stream A of the MA in International Studies, or permission of the instructor.

**IS 804-4 Historical Perspectives on Diplomacy and International Security**

Examines the evolution of the role of modern diplomacy in the 19th century and its application in the international relations of the 20th century; its practice and institutions. Prerequisite: graduate students enrolled in Stream B of the MA in International Studies, or permission of the instructor.

**IS 806-4 State Failure and Reconstruction: Comparative Perspectives**

The challenges posed by the 'new wars' and by state failure, and their consequences, the needs of humanitarian intervention, and the tasks of reconstructing or building viable states, involve critical security dimensions that are of both a military and non-military nature. It will explore the extensive body of literature on state formation and decay, and on intervention, in various regional settings with an emphasis on the causes of state failure, and the prospects of state rebuilding. Prerequisite: graduate students enrolled in Stream B of the MA in International Studies, or permission of the instructor.

**IS 807-4 Complex Emergencies and Humanitarian Intervention**

A multidisciplinary exploration of the background, dynamics, and outcomes of complex humanitarian emergencies, both those generated by conflict and war and by national disasters, drawing on country and regional case studies. The problems surrounding international intervention in such emergencies will be a particular focus. Prerequisite: graduate students enrolled in Stream B of the MA in International Studies, or permission of the instructor.

**IS 808-4 Directed Readings B**

A multi-disciplinary examination of the roles played by international organizations in addressing the difficulties of post-conflict recovery and external intervention in complex humanitarian emergencies. Prerequisite: graduate students enrolled in Stream B of the MA in International Studies, or permission of the instructor.

**IS 809-4 Selected Topics – Economic and Social Development of Selected Regions**

Examines the specific development experience of a selected region, taking account of the historical context, of state capacity, development strategies and of the political economy of development — as well as of the particular problems of development across different sectors of the economy, and the outcomes in regard to poverty and levels of well-being. Prerequisite: graduate students enrolled in Stream A of the MA in International Studies, or permission of the instructor.

**IS 816-4 Global Security Studies: Concepts, Theories and Issues**

Examines a range of perspectives about security and applies them to key international issues. Prerequisites: must be a graduate student enrolled in stream B of the MA in international studies program; or permission of the instructor.

**IS 887-3 Pre-project**

Preparatory course for IS 888 MA Project. Prerequisite: enrolment in the MA in International Studies program.

**IS 888-6 MA Project**

Students are expected to complete either two extended essays (each of not more than 8,000 words) based on core readings, or with the approval of the program director, a project. Prerequisite: graduate students enrolled in the MA in International Studies.

**IS 889-3 MA Project Completion**

Students are expected to complete either two extended essays (each of not more than 8,000 words) based on core readings, or with the approval of the program director, a project. Prerequisite: graduate students enrolled in the MA in International Studies continuing to work on their project.

## International Studies and Political Science

### Faculty of Arts and Social Sciences

**ISPO 337-4 Comparative Politics of Latin America**

Examines several Latin American nations from historical, political, and political economy perspectives. Prerequisite: six lower division units in political science or permission of the department. This course is identical to LAS 337 and POL 337 and students cannot take this course for further credit.

**ISPO 450-4 Globalization and Regional Politics in Latin America**

This seminar, designed for advanced undergraduate and graduate students, will discuss contemporary political issues arising from aspects of globalization, such as free trade agreements, international migration policies, and political reactions to the global media within particular regions of the world. The seminar will expose students to primary data research, and involve the development of a course project in line with their particular interests. Prerequisite: 30 units. This course is identical to POL 450 and LAS 450 and students cannot take this course for further credit.

**ISPO 450W-4 Globalization and Regional Politics in Latin America**

This seminar, designed for advanced undergraduate and graduate students, will discuss contemporary political issues arising from aspects of globalization, such as free trade agreements, international migration policies, and political reactions to the global media within particular regions of the world. The seminar will expose students to primary data research, and involve the development of a course project in line with their particular interests. Prerequisite: 30 units. This course is identical to POL

450W and LAS 450W and students cannot take this course for further credit. Writing.

**ISPO 483-4 Political Economy of Latin American Development**

Surveys theoretical and applied issues in Latin American development from a political economy perspective. Prerequisite: eight upper division units in political science or LAS 200 or permission of the department. This course is identical to POL 383, POL 483, LAS 318, 428, SA 328 and 428, and students cannot take more than one of these courses for further credit.

## Italian ITAL

### Faculty of Arts and Social Sciences

### Department of French

**ITAL 100-3 Introductory Italian I**

This course is designed to provide the student with the means of acquiring basic spoken fluency and reading facility.

**ITAL 101-3 Introductory Italian II**

This course continues the work of ITAL 100. Considerable emphasis will be placed on oral and reading facility as well as basic writing skills. Prerequisite: ITAL 100.

**ITAL 200-3 Intermediate Italian I**

An intermediate Italian course continuing the work of ITAL 101. In addition to consolidation of oral practice, grammar, reading and composition skills, a cultural component is included as well as selected readings from Italian authors. Prerequisite: ITAL 101.

**ITAL 201-3 Intermediate Italian II**

ITAL 201 continues the work of ITAL 200. Oral and written competence in Italian are extended through grammar review, oral practice, cultural studies, selected readings from Italian authors and multimedia activities. Prerequisite: ITAL 200.

**ITAL 300-3 Advanced Italian: Language and Culture**

Will continue the work of the 200-level courses with emphasis on the cultural aspects of Italian life. How does one live in Italy today? What are the cultural differences between the various regions? Fluency in language use, both oral and written, will be enhanced. Prerequisite: ITAL 201 or permission of Instructor.

## Japanese JAPN

### Faculty of Arts and Social Sciences

### Department of Linguistics

### Language Training Institute

**JAPN 100-3 Introduction to Japanese I**

A comprehensive introduction to the Japanese language providing basic oral and written communication skills through an emphasis on vocabulary, grammar, and culture. The three Japanese writing systems will also be introduced (Hiragana and Katakana for production; some Kanji for recognition only). Students with previous knowledge of Japanese should not enrol in this course without consulting a Japanese instructor.

**JAPN 101-3 Introduction to Japanese II**

Continues the work of JAPN 100. Prerequisite: JAPN 100 or equivalent.

**JAPN 200-3 Advanced Beginners' Japanese I**

Continues the work of JAPN 101. Emphasizes all four skills: listening, speaking, reading, and writing. Everyday language is emphasized. Prerequisite: JAPN 101 or equivalent.

**JAPN 201-3 Advanced Beginners' Japanese II**  
Continues the work of JAPN 200. Prerequisite: JAPN 200 or equivalent.

## Kinesiology KIN

### Faculty of Science

**KIN 105-3 Fundamentals of Human Structure and Function**

Basic anatomy and physiology of the skeletal, muscular, nervous, endocrine, cardio-respiratory, urinary, digestive, immune, and reproductive systems. (distance education). Kinesiology majors and honors students may not receive credit for KIN 105. KIN 205 or 208 may be used as a substitute for KIN 105 by students in the Kinesiology Minor and Certificate programs. No student may take both KIN 105 and KIN 208 for credit. Recommended: grade 11 biology, chemistry and physics.

**KIN 110-3 Human Nutrition: Current Issues**

An introduction of the principles of human nutrition with an emphasis on topics of current interest. The material is presented in a Canadian context to focus on nutrition practices and problems in this country. Students will gain an understanding of factors affecting food selection and the role of nutrition in maintaining good health. Students will develop the ability to discriminate between reliable and unreliable information on the subject of food and nutrition.

**KIN 111-3 Food and Food Safety**

This course includes basic information on food, the safety of the food supply and current issues around the production, storage and distribution of food. Students will gain an understanding of basic food components, the physical foundations of food science, and the elements of food processing and preservation. Food-borne disease, biotechnology, irradiation of food, contaminants and additives in food, Canadian food labelling and advertising regulations, and food consumption trends will be examined. Nutritional biochemistry concepts will be interfaced with practical questions of food choice and eating practices. Recommended: grade 11 chemistry.

**KIN 140-3 Contemporary Health Issues**

Explores health from a holistic perspective, in which health is viewed as physical, psychological, and social well-being. Considers genetics, environment, personal health behaviors (such as diet, exercise, stress management, and drug use), socioeconomic status, health care delivery systems, and aging with the intent to improve students' abilities to evaluate health information. Breadth-Science.

**KIN 142-3 Introduction to Kinesiology**

Basic procedures for the assessment of the status and performance of the individual according to the principles of anthropometry, functional anatomy, biomechanics, exercise physiology, and motor learning. Recommended: grade 11 biology, chemistry and physics. Breadth-Science.

**KIN 143-3 Exercise: Health and Performance**

Introduces the student to exercise physiology. Focuses on personal exercise prescription to improve aerobic capacity, muscular strength and endurance, and flexibility. Also discusses athletic conditioning, e.g. speed and power training. The effects of nutritional and environmental factors on exercise and the role of exercise in weight control and stress management are considered. Recommended: medical clearance from a personal physician. Breadth-Science.

**KIN 180-3 Introduction to Ergonomics**

Intended for students with a potential interest in ergonomics or human factors. The course surveys the design of work, the workplace environment, information systems, and consumer products. Topics include musculoskeletal disorders, manual materials



handling, workplace design, organization of work, design of human/machine interfaces, environmental ergonomics, industrial design, and legal and social issues. Prerequisite: Grade 12 Biology or Physics, Grade 12 Math.

### **KIN 180W-3 Introduction to Ergonomics**

Intended for students with a potential interest in ergonomics or human factors. The course surveys the design of work, the workplace environment, information systems, and consumer products. Topics include musculoskeletal disorders, manual materials handling, workplace design, organization of work, design of human/machine interfaces, environmental ergonomics, industrial design, and legal and social issues. Prerequisite: Grade 12 Biology or Physics, Grade 12 Math. Writing.

### **KIN 201-3 Biomechanics**

This course will cover the application of basic mechanics to human movement. It will provide students with a basic understanding of how forces act on body segments and how movements are produced. The subject matter of this course is relevant to quantifying all forms of physical activity, from activities of daily living, physically challenged movement patterns, to elite athletic performance. It also has applications in medical settings, including rehabilitation and sports medicine. Prerequisite: MATH 150, 151 or 154, MATH 152 or 155 (may be taken concurrently), PHYS 101 (or 120 or 125 or 140), KIN 142. Quantitative.

### **KIN 205-3 Introduction to Human Physiology**

An introductory survey of human physiology with an emphasis on mechanisms of regulation and integration. Anatomy of structures will be detailed only when it is critical to a functional understanding. Although this is intended as a survey course, some topics will be covered in reasonable detail in order to give insight into mechanisms of function. KIN 208 may not be used as a substitute for KIN 205 by students in the Kinesiology Major and Honors programs. Prerequisite: BISC 101, CHEM 281, PHYS 101 and 102. Kinesiology majors and honors students who have taken KIN 105 must also take KIN 205. For students taking both of these courses, credit will only be given for KIN 205.

### **KIN 207-3 Human Motor Systems**

Students are introduced to basic concepts in human motor systems underlying goal-direction movement. Topics including the problems of planning/control of movements, the role of the nervous system in integrating sensory and motor systems to produce movement, and motor learning are discussed. The course is taught from a behavioral and neurophysiological perspective and explores psychological influences on motor control. Research from a variety of distinct areas is integrated to provide a coherent picture of our understanding of human motor systems. Prerequisite: KIN 142 or permission of instructor.

### **KIN 208-3 Introduction to Physiological Systems**

An introduction to anatomy and physiological function of the major human systems, from a biomedical engineering perspective. Normally only available to students in the Biomedical Engineering Program. KIN 208 may be used as a substitute for KIN 105 by students in the Kinesiology Minor and Certificate programs. Kinesiology Major and Honors students may not receive credit for KIN 208. No student may take both KIN 105 and KIN 208 for credit, or both KIN 205 and KIN 208 for credit. Prerequisite: CHEM 180.

### **KIN 212-3 Food and Society**

Examines the relationship between society and the food we eat by evaluating how cultural, social, and economic forces interact to influence health and nutritional status. Attention is given to cultures in British Columbia. Impact of national policies and

marketing on food choice are discussed. Prerequisite: KIN 110.

### **KIN 221-3 Special Topics in Kinesiology**

Selected topics in areas not currently offered within the undergraduate course offerings in the School of Kinesiology. Prerequisite to be announced.

### **KIN 241-3 Sports Injuries – Prevention and Rehabilitation**

Includes delineation of the role of the sports therapist and will study the structural and functional characteristics of the body with regard to the prevention of injury in sport. A first aid approach to athletic injuries will be developed with practical experience in routine treatments. Prerequisite: KIN 142.

### **KIN 301-3 Biomechanics Laboratory**

A laboratory course on the quantitative biomechanical evaluation of human movement. Students will learn analysis techniques for quantifying kinematics and kinetics of body segments in athletes, normal populations, and special populations during activities such as walking and jumping. Experiments will look at the nature of muscular force generation, and the mechanical impedance properties of the musculoskeletal system, as well as patterns of muscle activation, using surface EMG. Prerequisite: PHYS 102 (or 121 or 126 or 141), KIN 201. Quantitative.

### **KIN 303-3 Kinanthropometry**

A study of human size, shape, proportion, composition, maturation and gross function related to basic concepts of growth, exercise, performance and nutrition. Prerequisite: KIN 105 or 142, and STAT 201 or an equivalent statistics course.

### **KIN 304-3 Inquiry and Measurement in Kinesiology**

This course covers the evaluation of measurement quality, test construction and assessment, and computer techniques for data capture and signal processing relevant to issues in Kinesiology. Prerequisite statistical knowledge will be put into practice when discussing typical research designs, modeling and hypothesis testing in kinesiology. Prerequisite: KIN 142, 201, 205, and STAT 201. Quantitative.

### **KIN 304W-3 Inquiry and Measurement in Kinesiology**

This course covers the evaluation of measurement quality, test construction and assessment, and computer techniques for data capture and signal processing relevant to issues in Kinesiology. Prerequisite statistical knowledge will be put into practice when discussing typical research designs, modeling and hypothesis testing in Kinesiology. Prerequisite: KIN 142, 201, 205, 207, and STAT 201. Writing/Quantitative.

### **KIN 305-3 Human Physiology I**

Deals with the physiology and pathophysiology of the cardiovascular, respiratory, and renal systems in detail. Prerequisite: KIN 205, MBB 231 (or 201), MATH 155 (or 152). Non-majors require KIN 205 (or BISC 305), MBB 231 (or 201) plus permission of the instructor.

### **KIN 306-3 Human Physiology II (Principles of Physiological Regulation)**

Examines the regulation of body functions with an emphasis on the endocrine, gastrointestinal and neuronal systems. The course focuses on integration of physiological mechanisms at the cellular and organ levels. Examples of abnormal human physiology are used to illustrate important principles. Prerequisite: KIN 201, 205, MBB 231 (or 201), MATH 155 (or 152). Non-majors require KIN 205 (or BISC 305), MBB 231 (or 201) plus permission of the instructor.

### **KIN 308-3 Experiments and Models in Systems Physiology**

Measurement, analysis and modeling of human physiological systems from a biomedical engineering perspective. Topics include data acquisition, muscle mechanics, nerves and reflexes, metabolism, movement, cardiovascular function, and pulmonary function. Prerequisite: KIN 208. Recommended: MATLAB Experience.

### **KIN 310-3 Exercise/Work Physiology**

The study of human physiological responses and adaptations to acute and chronic exercise/work. Cardiorespiratory, cellular and metabolic adaptations will be studied and discussed in detail. Prerequisite: KIN 205, MBB 201 (or 231). Recommended: KIN 201.

### **KIN 311-3 Applied Human Nutrition**

The principles of nutritional biochemistry are applied to nutrition in life cycle – pregnancy, lactation, infancy, childhood, adolescence and aging. The second part of the course deals with common disease conditions where nutrition plays an important role in prevention or treatment or both. The course is presented in the Canadian context featuring sources of help on Canadian practice, standards and regulations. Prerequisite: KIN 105 or 205 and 110. Students with credit for KIN 220 may not take KIN 311 for further credit.

### **KIN 312-3 Nutrition for Fitness and Sport**

This course examines the theory and application of nutrition for fitness and sport. Students will study issues around dietary practices commonly promoted for performance enhancement, including mechanisms, effectiveness, risks and regulations. Students will learn skills for critical evaluation of nutrition research and nutrition claims, and will employ these in several small group projects investigating specific nutrition issues and products. Prerequisite: KIN 105 (or 205), and 110.

### **KIN 313-3 Nutrition and the Life Cycle**

The factors that determine human nutritional requirements and health under a range of conditions throughout the human life span (pregnancy, lactation, infancy, childhood adolescence, aging) are evaluated. The role of nutrition is evaluated in response to the metabolic and physiologic changes during growth and development versus aging, touching upon eating disorders, depression, osteoporosis, epigenetics, and pharmacology and toxicology of commonly prescribed medications in aging adults. Prerequisite: KIN 105 or 205 and 110. Students with credit for KIN 220 or 311 may not take KIN 313 for further credit.

### **KIN 314-3 Nutrition and Chronic Disease**

Principles of nutrition are applied to common disease conditions where nutrition plays an important role in prevention, treatment or both. Nutrition in obesity, diabetes, cancer and cardiovascular disease are highlighted. The impact of dietary interventions such as DASH and the Diabetes Prevention Program upon chronic disease is evaluated. Pharmacology and toxicology of common medications with regard to alterations in metabolism in disease are discussed, as well as noncompliant and depressed patients. Prerequisite: KIN 105 or 205 and 110. Students with credit for KIN 220 or 311 may not take KIN 314 for further credit.

### **KIN 324-3 Principles of Human Anatomy**

Pursues a systematic study of human anatomy with emphasis on functional applications. A study of organs and body systems using computer software supported tutorials to provide an understanding of the three dimensional organization of the human body. Participation in all tutorials is required. This course may not be taken for credit by kinesiology majors. Prerequisite: KIN 142, 205 and at least 60 units of undergraduate credit. Students with credit for KIN 325 or 326 may not take KIN 324 for further credit.

**KIN 325-3 Basic Human Anatomy**

For students interested in physical education, health science professions and liberal arts. Brief discussions on applied anatomy, aging, common dysfunctions and diseases enable students to appreciate the relationship between structure and function. Prerequisite: KIN 142 and either KIN 105 (with a grade of C or higher) or KIN 205. Available only through correspondence, this course will not be counted as an upper level optional course for a major in kinesiology. Students with credit for KIN 326 may not take KIN 325 for further credit.

**KIN 326-4 Functional Anatomy**

Pursues a systematic study of human anatomy with emphasis on functional applications. A comparative study of organs and body systems using laboratory dissections to provide an understanding of the three dimensional organization of the human body. Participation in all labs is required. Prerequisite: KIN 142, 201, 205 and at least 60 units of undergraduate course credit. Students with credit for KIN 325 may not take KIN 326 for further credit.

**KIN 336-3 Histology**

Light and electron microscopic study of mammalian tissues and organs with emphasis on human systems. Prerequisite: one of KIN 325, 326, BISC 305, 316.

**KIN 340-3 Active Health: Behavior and Promotion**

Relationships among health, physical activity, and other health-associated behaviors are examined. In addition, the theories and models of health behavior, in the context of intervention and promotion strategies, are discussed. Pertinent background information is provided, concerning the influence of fitness on various disease states, as well as the epidemiology of health and exercise behaviors. Prerequisite: KIN 142, STAT 201 (or PSYC 201). Recommended: KIN 140.

**KIN 342-3 Active Health**

An extension of KIN 143, Exercise Management, this course parallels the on-campus course KIN 343. This course is designed for students completing the health and fitness certificate and/or a kinesiology minor. The goal of the course is to provide students with an opportunity to appreciate principles of exercise leadership, assess individual fitness needs, design programs and monitor effects of prescribed exercise. This course is available only through distance education. Prerequisite: KIN 105 (or 205), 142 and 143. Kinesiology majors and honors students may not receive credit for KIN 342.

**KIN 343-3 Active Health: Assessment and Programming**

An extension of KIN 143, Exercise Management, designed to provide students with an opportunity to appreciate principles of exercise leadership, assess individual fitness needs, design programs and monitor effects of prescribed exercise. The course includes a 34 hour practicum. Prerequisite: KIN 142, 143 and 205; STAT 201 or an equivalent statistics course, KIN 340 (may be taken concurrently). Students with credit for KIN 342 may not take KIN 343 for further credit. Quantitative.

**KIN 344-3 Exercise Prescription**

Scientific principles relevant to the design of safe and effective conditioning programs for both the general population and target groups. Students will learn effective training techniques for cardiovascular aerobic conditioning; muscular endurance, strength, and power; anaerobic conditioning, and flexibility. Safety, injury prevention, rehabilitation, reconditioning, and correct weightlifting mechanics will be discussed. Prerequisite: KIN 110, 201, and 343.

**KIN 351-3 Practicum I**

The first term of work experience in the Kinesiology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: students must complete Bridging Online (visit [www.sfu.ca/coop/bol](http://www.sfu.ca/coop/bol) for further details) at least two terms before their anticipated co-op placement. Students must then apply to the Kinesiology Co-op Program by the first week of the term preceding the work term. Normally, students will have completed a minimum of 45 units by the end of the term of application, KIN 142, plus at least two other kinesiology courses and have a minimum GPA of 2.50. Work terms are graded as pass/fail (P/F).

**KIN 352-3 Practicum II**

The second term of work experience in the Kinesiology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: KIN 351. Work terms are graded as pass/fail (P/F).

**KIN 367-3 Psychology of Motor Skill Acquisition**

An examination of phases of skill acquisition, transfer of training, training principles, retention of motor skills, and the influence of motivation, personality and social factors on the acquisition of skill. Prerequisite: KIN 207.

**KIN 375-3 Human Growth and Development**

The fundamentals of physiological growth and development from conception to maturity. Topics included form a strong foundation for those interested in designing appropriate activity programs for children of all ages. Prerequisite: KIN 105 or 205, and 142.

**KIN 380-3 Occupational Biomechanics**

This course will teach the principles of biomechanical analysis and their application in the workplace. Topics will include techniques for measurement and analysis of movement; analysis of forces and accelerations in three dimensions; work and power; simple biomechanical and biodynamic models; standards for lifting and carrying, their application and limitations. Prerequisite: KIN 180, 201, 205 and 326 which may be taken concurrently. Quantitative.

**KIN 381-3 Psychology of Work**

The application of psychological principles and methods to the study of human performance at work. A systems approach will be taken to study the interactions among the individual worker, his/her task, groups of workers, and the management structure of the organization. Prerequisite: PSYC 210 or both of KIN 207 and STAT 201. Corequisite: STAT 201 may be taken concurrently. Recommended: KIN 180.

**KIN 382-3 Workplace Health**

The focus of this course will be the study of the physical environment and its effects on the health, safety and performance of the worker. Physical problems associated with noise, vibration, lighting, radiation, dust and ventilation will be examined together with methods of recognition, treatment, protection and prevention. Prerequisite: KIN 142, 201, 205. Quantitative.

**KIN 383-3 Human-Machine and Human-Computer Interaction**

Human information processing and motor control factors are considered as factors relevant to effective, usable human-machine interfaces. A user-centred approach deals with task analysis, context of use, information processing demands, the interface, and the design, assessment and usability of tools, machines and computers. Prerequisite: KIN 180, 201 and 207.

**KIN 402-3 Mechanical Behavior of Tissues**

An extension of KIN 201, designed to provide students with an understanding of tissue structure-function relations in health and disease, from a biomechanical perspective. Topics include the

effect of disease (and aging) on tissue properties, the mechanics and prevention of tissue injury, and the design of implants and prostheses. While the focus will be primarily on analysis of the musculoskeletal system at the tissue and whole-body levels, we will also consider biomechanical models of the cardiovascular and respiratory systems. Prerequisite: KIN 201.

**KIN 405-3 Clinical Exercise Physiology I: Cardiorespiratory and Metabolic Disorders**

A study of the clinical aspects of exercise physiology by thoroughly examining the relationship between exercise and chronic disease. For each chronic disease state and condition, this course covers its physiology, pathophysiology, and pharmacotherapy along with exercise testing, prescription, safety, and programming issues. Prerequisite: KIN 305, 306, 324 or 326, 344.

**KIN 406-3 Clinical Exercise Physiology II: Musculoskeletal, Neuromuscular, and Immunological Disorders**

A study of the clinical aspects of exercise physiology by thoroughly examining the relationship between exercise and chronic disease. For each chronic disease state and condition, this course covers its physiology, pathophysiology, and pharmacotherapy along with exercise testing, prescription, safety, and programming issues. Prerequisite: KIN 305, 306, 324 or 326, 344.

**KIN 407-3 Human Physiology Laboratory**

Experiments dealing with the nervous, muscular, cardiovascular, respiratory, and renal systems are covered. Prerequisite: KIN 305 and 306, one of which must already have been completed and the other can be taken concurrently. Quantitative.

**KIN 412-3 Molecular and Cellular Cardiology**

This course entails a detailed analysis of the molecular and cellular basis of cardiac function. The material will be derived from myriad disciplines including: anatomy (histology and ultrastructure), biomechanics, physiology, electrophysiology, biochemistry and molecular biology. A particular emphasis will be placed on the mechanisms by which the heart responds to stresses such as ischemia and exercise. Prerequisite: KIN 305.

**KIN 415-3 Neural Control of Movement**

An in depth treatment of neurophysiology. Synaptic inputs and cell interactions in the spinal cord are used to illustrate the general principles of interaction in the nervous system. Other topics include central and peripheral motor control, the vestibular system and the visual system. Prerequisite: KIN 306 or BISC 305 and KIN 326.

**KIN 416-3 Control of Limb Mechanics**

Control of the human musculoskeletal system examined from the perspective of mechanical impedance. Mechanics of individual muscles, single joints spanned by multiple muscles and multi-joint limb segments are discussed in the context of physical interaction with the environment. Prerequisite: KIN 201 and 306.

**KIN 417-3 Obesity, Adipocyte Function and Weight management**

Discusses mechanisms of health and disease with respect to a range of molecular mechanisms of physiology and organ system function, including how adipokines have an effect on metabolic alterations in immunology and hormone production in diabetes, stress and cardiovascular disease. Health behavior change in obesity and impact of dietary habits upon hyperlipidemia and apolipoprotein metabolism are addressed in addition to nutritional challenges in weight management and obesity. Prerequisite: KIN 110, 306, 314 (or 311), 340.

**KIN 420-3 Selected Topics in Kinesiology I**

Selected topics in areas not currently offered as formal courses within the undergraduate course offerings in the School of Kinesiology. The topics in this course will vary from term to term, depending on faculty availability and student interest. Prerequisite: to be announced in the Undergraduate Schedule of Classes and Examinations.

**KIN 421-3 Selected Topics in Kinesiology II**

Selected topics in areas not currently offered as formal courses within the undergraduate course offerings in the School of Kinesiology. The topics in this course will vary from term to term, depending on faculty availability and student interest. Prerequisite: to be announced.

**KIN 422-3 Selected Topics in Kinesiology III**

Selected topics in areas not currently offered as formal courses within the undergraduate course offerings in the School of Kinesiology. The topics in this course will vary from term to term, depending on faculty availability and student interest. Prerequisite: To be announced

**KIN 423-3 Selected Topics in Kinesiology IV**

Selected topics in areas not currently offered as formal courses within the undergraduate course offerings in the School of Kinesiology. The topics in this course will vary from term to term, depending on faculty availability and student interest. Prerequisite: to be announced in the Undergraduate Schedule of Classes and Examinations.

**KIN 426-3 Neuromuscular Anatomy**

This course explores human neuromuscular anatomy using a lecture format supplemented by course readings, an anatomy atlas and tutorials which are presented in an interactive fashion via the Macintosh Computer Laboratory on campus. A strong grounding will be given in neuroanatomy with additional emphasis on the limb musculature and its innervation. Prerequisite: KIN 325 or KIN 326 or PSYC 280

**KIN 430-3 Human Energy Metabolism**

Pathways of energy flow in animals and man, and the relationship of biological energy transduction to the needs of the whole animal. Quantitative aspects of bioenergetics and adaptation to changes in energy supply and demand. Measuring techniques applied to adaptations to muscle activity and variations in food intake. Prerequisite: KIN 306 or 310 or MBB 321 (or BICH 321).

**KIN 431-3 Environmental Carcinogenesis**

An introduction to core concepts in the field of environmental carcinogenesis. Emphasis will be on the complex interactions of lifestyle factors, carcinogen exposure, genetic susceptibility and dietary habits as determinants of cancer risk. Class work will include discussions of new techniques to monitor exposure to environmental carcinogens and of regulatory aspects of governmental agencies towards carcinogenic agents, as well as approaches being used by such agencies in risk assessment. Prerequisite: MBB 231 (or MBB 201) and at least 90 units.

**KIN 442-3 Biomedical Systems**

Concepts and tools of systems analysis will be introduced. Since these involve a philosophy of problem-solving rather than a catalogue of techniques, they will be applied to a number of very different problems in biomedicine and kinesiology. Prerequisite: KIN 305 and 306.

**KIN 444-3 Cardiac Disease: Pathophysiology and Assessment**

Examines the etiology, prevention, and rehabilitation of cardiovascular disease. Involves the assessment of patient risk factors, and non-invasive cardiovascular assessments. Particular emphasis will be placed upon the recording and interpretation of the electrocardiogram in health and disease.

Prerequisite: KIN 305. Recommended: KIN 110, 306, 310 and 343.

**KIN 445-3 Advanced Cardiac Rehabilitation**

Builds upon the knowledge and skills learned in KIN 444 through advanced ECG interpretation, exercise stress testing, and patient counseling. Students will be required to complete a 30 hour practicum within a community or hospital-based cardiac rehabilitation program. In addition, this course will introduce students to relevant research questions in cardiac rehabilitation and how this field is expanding and evolving. Prerequisite: KIN 444.

**KIN 446-3 Neurological Disorders**

Examines neural and neuromuscular diseases, including Alzheimer's disease, amyotrophic lateral sclerosis, multiple sclerosis, stroke, and myasthenia gravis. Emphasizes currently favoured hypotheses, underlying evidence and pathogenic mechanisms. Prerequisite: KIN 306. Recommended: KIN 336 and/or KIN 415.

**KIN 448-3 Rehabilitation of Movement Control**

This course is aimed at students interested in neuromuscular rehabilitation. Students will learn about the pathological origins of movement disorders associated with impaired function of sensory and motor systems. The course will be focused on the stages and strategies for recovery of voluntary control of essential functions. The range of rehabilitation interventions available to assist recovery and restore voluntary control will be explored, with special emphasis on advanced techniques to restore control of movement and bodily functions in paralyzed people. Prerequisite: KIN 201, 207 and 306, or for biomedical engineering students, KIN 201, 208 and 308.

**KIN 451-3 Practicum III**

The third term of work experience for students in the Kinesiology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: KIN 352. Work terms are graded as pass/fail (P/F).

**KIN 452-3 Practicum IV**

The fourth term of work experience for students in the Kinesiology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: KIN 451. Work terms are graded as pass/fail (P/F).

**KIN 453-3 Practicum V**

Optional term of work experience for students in the Kinesiology Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: KIN 452. Work terms are graded as pass/fail (P/F).

**KIN 457-3 Behavioral Neuroscience**

**Undergraduate Honors Thesis Proposal**  
Directed study and research leading to an Honors thesis proposal (KIN459/PSYC 459). Prerequisite: 90 units, including PSYC 301 with a minimum grade of B and permission of the Chair of the Behavioral Neuroscience Coordinating Committee. This course is identical to PSYC 457 and students may not take both courses for credit.

**KIN 459-9 Behavioral Neuroscience Undergraduate Honors Thesis**

A written thesis based on research previously proposed in KIN 457/PSYC 457. Prerequisite: a minimum grade of B in KIN 457/PSYC 457. This course is identical to PSYC 459 and students may not take both courses for credit. Corequisite: must be enrolled in the Honors Program of the B.Sc. in Behavioral Neuroscience.

**KIN 461-3 Physiological Aspects of Aging**

Designed for those who require a serious but fairly broad discussion of specific physiological aspects of aging. The overall emphasis is on humans and other mammalian species and the varieties of aging

changes they manifest. Prerequisite: KIN 105 or 205, 142 and 90 units.

**KIN 467-3 Human Motor Control**

The advanced study of human motor control, primarily from a behavioral perspective. Course content will include sections on: Bernstein's approach to the problem of co-ordination and action, theories of action, studies of relatively recent empirical work in support of the theories. Prerequisite: KIN 205 and 207 or permission of instructor.

**KIN 481-3 Musculoskeletal Disorders**

Considers the prevalence, distribution, risk factors, mechanisms, management and prevention of disorders of muscle, connective tissue, joint, and bone. Covers tendonitis, bursitis, carpal tunnel syndrome and other overuse injuries from work and sport; whiplash-associated disorders; arthritis; osteoporosis; chronic pain; fibromyalgia. Prerequisite: KIN 201 and 326.

**KIN 484-3 Altitude and Aerospace Physiology**

The theme of this course is human physiology in environments of decreased atmospheric pressure, high G-force, and weightlessness. The course will deal with acute and chronic adaptations to these environments as well as life support systems and 'countermeasures' developed to expand the envelope of human performance. Developments of breathing apparatus and G-suits for high performance aircraft will be examined as they relate to solving the physiological problems of exposure to these environments. Effects of short and extended periods of weightlessness on cardiovascular, cerebrovascular, musculo-skeletal, neural, hormonal and vestibular systems will be explored. Prerequisite: KIN 305, 306. Recommended: KIN 407. Quantitative.

**KIN 485-4 Human Factors in the Underwater Environment**

The physiological effects of pressure on the human body and interfacing of humans and machine underwater are considered. Topics include the history of diving, decompression theory, decompression disorders, pulmonary function, underwater work, underwater breathing apparatus, narcosis, saturation diving, high pressure nervous syndrome, and atmospheric diving suits. Prerequisite: KIN 305. Quantitative.

**KIN 486-3 Ergonomics in the Design of Consumer Products**

Covers the role of human factors in the design process. Explains how human factors/ergonomics knowledge is incorporated into the design process in order to improve safety, comfort, usability and efficiency for consumer products and products used in the workplace. Biomechanical principles, concepts from human-computer interaction and basic ergonomics/human factors principles will be applied. An applied project will be undertaken by groups of students and will form a significant part of the course. This course is designed for students who are following the human factors/ergonomics stream of the undergraduate program. Prerequisite: KIN 180 and KIN 380 or 383.

**KIN 488-3 Ergonomics Laboratory**

A project based laboratory course that applies theoretical knowledge to industrial situations. Instruction will be provided in proposal development, evaluation techniques, and report writing. Students will complete projects in human-machine interaction, occupational ergonomics, and industrial design. Prerequisite: KIN 180, plus at least four of the following: KIN 380, 381, 382, 383, 481, 442, 486 and CMNS 354.

**KIN 496-3 Directed Study I**

Directed reading and literature research on topics selected in consultation with the supervising instructor. This course may not be repeated for

additional credit. A short proposal of the project, approved by the course supervisor, must be submitted for approval to the chair of the undergraduate program committee by the end of the first week of classes of the term. Prerequisite: permission from the chair of the undergraduate program committee. Usually, upper level standing with at least 75 units in the kinesiology program will be required. Honors students may count only one of either KIN 496 or KIN 498 towards their 27 upper division Kinesiology elective units.

### **KIN 497-3 Undergraduate Honors Thesis Proposal**

Supervised directed study and research leading to the development of a formal undergraduate thesis proposal for work to be conducted in KIN 499. The activity in KIN 497 may be augmented by other course work and a pilot study. In cases where an industrial/community partner is involved in the development of a project, the work need not be conducted at Simon Fraser University and may be completed external to SFU. Supervision of KIN 497 will be conducted by a suitable faculty member, but may be co-supervised by an industrial/community partner. Supervisor(s) must be approved by the undergraduate program committee. The plan of activities for each KIN 497 should be submitted to the chair of the undergraduate program committee for approval one month prior to the term in which the course will be taken. Prerequisite: only students in the honors program may enrol for KIN 497; 90 units, STAT 201, and permission of the chair of the undergraduate program committee.

### **KIN 498-3 Directed Study II**

Directed study and research selected in consultation with the supervising instructor. A short proposal of the project approved by the course supervisor, must be submitted for approval to the chair of the undergraduate program committee by the end of the first week of classes of the term. Prerequisite: STAT 201 and permission from the chair of the undergraduate program committee. Usually, upper level standing with at least 75 units in the kinesiology program will be required. Honors students may count only one of either KIN 496 or KIN 498 towards their 27 upper division kinesiology elective units.

### **KIN 499-12 Undergraduate Honors Thesis**

A thesis based on research previously proposed in KIN 497. Formal approval of the research topic is given by attaining a minimum grade of B in KIN 497. Regulations regarding the locale of the work, supervision and other arrangements, follow those for KIN 497. The written thesis should be submitted to the chair of the undergraduate program committee by the last day of exams of the term. The thesis will also be presented orally as a seminar in an open forum at the end of the term. Prerequisite: KIN 497. Only students in the honors program may enrol for KIN 499. A student may enrol for one other course concurrently with KIN 499 with permission from the faculty supervisor for KIN 499.

### **KIN 801-3 Seminar on Research in Kinesiology**

Required of all graduate students entering kinesiology. Students will gain perspective on how their research fits into the overall spectrum of departmental research. Presentations will be given by faculty and students, to be followed by seminar discussions. Students will be exposed to techniques available in the school, their strengths and weaknesses, what data the techniques yield, and how the scientific method is applied in interpreting the data. Students will learn how to give oral, poster, and web-based presentations, and how to facilitate discussions. Students with credit for this course when taught as KIN 808 may not take KIN 801 for additional credit.

### **KIN 802-3 Statistical Applications in Kinesiology Research**

A lecture-lab structured course, with one lecture per week and numerous non-scheduled lab assignments. Mini-exams are held every three weeks to monitor students' progress and assist students in keeping up with course materials. It will review fundamentals of descriptive statistics and hypothesis-testing. The remainder of the course will concentrate on analysis of variance and co-variance and an overview of correlation and regression. Students with credit for this course when taught as KIN 807 may not take KIN 802 for additional credit.

### **KIN 804-3 Project**

Required for MSc (course work) students only. The course provides an opportunity for concentrated research in a focused area with a faculty supervisor resulting in a research paper or experimental report.

### **KIN 805-3 Directed Studies**

An opportunity to develop with a faculty supervisor considerable depth of knowledge and expertise in a focused area of study. Normally, KIN 805 may not be taken for credit more than once and may not be taken for credit by MSc (course work) students.

### **KIN 806-808-3 Special Topics**

Special topics in areas not currently covered within the graduate program offerings. The course may be offered as a lecture or a seminar course.

### **KIN 809-1.5 Project Completion**

MSc Course Work students who do not complete KIN 804 in one term must register in this course in all subsequent terms until the project is completed. No additional credit will be given for this course.

### **KIN 810-3 Integrative Muscle Physiology**

Recent developments in the application of molecular biology, biochemistry and cell biology to study muscle function during exercise. Topics will include muscle-specific gene expression, energy metabolism and its control, biochemical plasticity of muscle, hypertrophy and signal transduction.

### **KIN 811-3 Special Topics – Anatomy**

### **KIN 812-3 Molecular and Cellular Cardiology**

This course involves biochemical and biophysical analyses of cardiac function. Topics for discussion include excitation, contraction, E-C coupling and the regulation of pHi. Prerequisite: introductory biochemistry and biophysics.

### **KIN 821-3 Environmental and Exercise Physiology**

Review course covering aspects of cardiovascular and respiratory physiology and discussion of environmental physiology topics such as hypoxia.

### **KIN 825-3 Behavioural Neuroscience**

Selected aspects of research and theory in the behavioural neurosciences. The focus will be on delineating the problems of developing viable theories of motor learning and action, and on seeking solutions to those problems. The course also includes sections on information processing and co-ordination of complex movement.

### **KIN 826-3 Motor Control: a Behavioral Perspective**

The study of selected aspects of research in motor behavior. The focus will be on delineating the problems of a viable theory of action, and on seeking solutions to the problems. Prerequisite: KIN 467, or equivalent.

### **KIN 831-3 Current Topics in Thermophysiology**

Provides a detailed understanding of physiological and behavioral mechanisms underlying temperature regulation in humans and other animals. Thermoregulation will be studied during acute and chronic exposure to hot and cold environments, from the cellular to whole body level. The course will

examine the relationship between thermoregulatory and other physiological systems (respiratory, muscular, cardiovascular, neural).

### **KIN 835-3 Neuromuscular Disorders**

Provides a broad understanding to the student as to the way nervous system disease is believed to occur, some of the mechanisms behind these processes, the ways that are used to study these mechanisms and the ability to think about these processes as expressed in a critique of a research paper. It will include discussions of ALS, Alzheimer's disease, stroke and myasthenia gravis among others. Students with credit for this course when taught as KIN 806 may not take KIN 835 for additional credit.

### **KIN 840-3 Human Biomechanics**

Review the theoretical basis and tools of biomechanics and to examine how biomechanics research can contribute to our understanding of the cause, prevention and treatment of disease and injury and how biomechanics relates to neural control of movement. Topics will include static equilibrium, equations of motion, stability, inverse and forward dynamics, vibration and impact, mechanical properties of tissues, muscle models, feedback and feedforward control, impedance control and internal dynamics models.

### **KIN 850-3 Control Systems in Health and Disease**

Biomolecular interactions exert or initiate substantive control thereby integrating cellular and physiological function. Defects in these biomolecular interactions frequently lead to altered control systems or responses of these systems in various disease states. Topics may include mechanisms of hormone action, cellular transport and signaling, immunoregulation, nutrition and metabolic control.

### **KIN 851-3 Recent Advances in Experimental Carcinogenesis**

This class will integrate current knowledge on the process of carcinogenesis in tissues in which cancer commonly occurs in North America. Discussions will focus on new techniques being developed to identify individuals at risk for cancer and new approaches being used to intervene to prevent development of the disease. Prerequisite: KIN 431.

### **KIN 861-3 Neuroscience**

Topics include the physiology of walking, cerebral and cerebellar cortical physiology, the generation of repetitive neural discharges, as well as hormonal control of neuron behaviour. The emphasis will be a broad introduction to neuroscience, as well as some neuroscience research methods and applications.

### **KIN 865-3 Neural Control of Movement**

The course covers the peripheral nervous system including reflexes and spinal cord organization in detail. This prepares the student with a thorough understanding of general functioning of the nervous system. In addition, the course covers the neurophysiology of the cerebellum, motor cortex, basal ganglia, vestibular system and other related structures involved in central control of movement. Laboratory demonstrations are part of the course.

### **KIN 870-3 Experiments and Models in Physiology**

Introduction to the basic principles of mathematical modeling of physiological systems and mathematical techniques that are commonly used in modeling. The course will provide students with an opportunity to learn and apply some of these techniques and to develop an appreciation for the utility of mathematical models, as well as limitations and potential pitfalls.

### **KIN 880-3 Internal Biomechanics**

To relate the laws of mechanics to the function and structure of tissues and systems of the human body. Emphasis will be in relation to internal events

occurring in normal and abnormal human states.  
Prerequisite: KIN 402.

### **KIN 885-3 Seminar on Human-Machine Systems**

A study of the principles involved in integrating human capabilities into complex machine systems.

### **KIN 890-3 Engineering Aspects of Human Function**

The application of engineering principles to the study of normal and abnormal human function.

**KIN 898-6 MSc Thesis**

**KIN 899-6 PhD Thesis**

## **Labor Studies LBST Faculty of Arts and Social Sciences Department of History**

### **LBST 101-3 Introducing Labor Studies**

Introduction to key concepts necessary for understanding the character and organization of work in contemporary society. The discussion of such issues as how our society decides who works, what the work will be, and under what conditions people work, will be situated in the context of current debates, trend and issues.

### **LBST 301-3 Labor Movements: Contemporary Issues and Images**

This course will give students a comprehensive understanding of the contemporary structure, issues, and perceptions of labor unions and other forms of working-class organization. It will focus on external and internal problems that the labor movement faces, such as labor law and state policy, employer strategies, bureaucracy, racism and sexism. The treatment of labor in the media and popular culture will provide an understanding of how labor is viewed in society, how labor views itself, and how working-class culture informs and is informed by the larger culture. Recommended: LBST 101.

## **Language LANG Faculty of Arts and Social Sciences Department of Linguistics Language Training Institute**

### **LANG 132-2 Introductory Fijian I**

An introduction to Fijian language and culture, LANG 132 is offered as part of the Linguistics Field School in Fiji and will be conducted on-site, in co-operation with local instructors from the region. Variable units: 1, 2, 3, 4, 5.

### **LANG 134-3 Introductory Arabic I**

### **LANG 148-3 Special Topics**

The acquisition of introductory language skills in a world language not separately designated in the Calendar. The specific course number and units assigned will vary with the language studied as well as the focus and method of instruction. Variable units: 1, 2, 3, 4, 5.

### **LANG 158-3 Introduction to a World Language (Haida Immersion Level 1)**

### **LANG 220-3 Ancient Greek III**

Continuation of HUM 152 Ancient Greek II. Focuses on reading Ancient Greek at an intermediate level. Prerequisite: HUM 152 or permission of the instructor. Students who have taken LANG 220 Intermediate Ancient Greek may not take this course for further credit.

### **LANG 222-3 Latin III**

Continues the work of HUM 162 Latin II. Focuses on reading classical Latin at an intermediate level, using mainly stories from Roman mythology. Prerequisite:

HUM 162 or permission of the instructor. Students who have taken LANG 222 Intermediate Language Study I – Latin III may not take this course for further credit.

### **LANG 224-3 Western Secwepemctsin Immersion I**

The development of fluent language skills in a world language not separately designated in the Calendar. The specific course number and units assigned will vary with the language studied as well as the focus and method of instruction. Prerequisite: LANG 150-199 in the same language, or placement on the basis of prior knowledge. Please inquire at the Language Training Institute for information on placement.

### **LANG 248-3 Intermediate Xaad-kil Haida I**

The development of fluent language skills in a world language not separately designated in the Calendar. The specific course number and units assigned will vary with the language studied as well as the focus and method of instruction.

### **LANG 270-2 Ancient Greek IV**

Continues the work of LANG 220 Ancient Greek III, focuses on reading Ancient Greek at an intermediate level. Prerequisite: LANG 220 Ancient Greek III. Students who have taken LANG 270 Intermediate Ancient Greek II may not take this course for further credit.

### **LANG 272-3 Latin IV**

Continues the work of LANG 222 Latin III. Focuses on reading classical Latin at a more advanced intermediate level. Prerequisite: please see instructor or inquire at the Language Training Institute for information on placement. Students who have taken LANG 272 Intermediate Language Study II – Latin may not take this course for further credit. Variable units 1, 2, 3, 4, 5.

## **Latin American Studies LAS Faculty of Arts and Social Sciences**

### **LAS 100-3 Introduction to Latin American Issues**

A multidisciplinary introduction to contemporary Latin America. The course is organized in three modules: people and the land, the human condition, and the political alternatives, each of which will be examined from the varying perspectives of history, geography, politics, the arts, etc. Students who have taken LAS 200 as Introduction to Latin American Development Studies, or LAS 200 Introduction to Latin American Issues, may not take this course for further credit. Breadth-Social Sciences.

### **LAS 300-3 Latin American Literature**

A study in English of significant contributions to Latin American literature. Breadth-Humanities.

### **LAS 312-3 Special Topics: Latin American Cultural Topics**

A cross-disciplinary focus on specific elements of contemporary Latin American culture. Topics such as indigenism, Afro-Latin culture, religion, literature, and folklore will be studied. Prerequisite: LAS 140 or 200.

### **LAS 380-3 Practicum I**

First term of work experience in the Latin American Studies Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: 30 units with a minimum CGPA of 2.75, including recommended courses LAS 100, 140, 200 and SPAN 102. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the second week of the term preceding the employment term.

### **LAS 390-3 Practicum II**

Second term of work experience in the Latin American Studies Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: completion of LAS 380 and 45 units with a minimum CGPA of 2.75. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the second week of the term preceding the employment term.

### **LAS 402-5 Field Study**

A multidisciplinary study of a selected country or region. This course will normally be part of the LAS Field School in Latin America, and will be conducted in co-operation with local lecturers from the host country. Prerequisite: LAS 200.

### **LAS 404-3 Special Topics: Field School I**

This course will be part of the LAS field school in Latin America. The selected region will be examined on site from a multidisciplinary perspective. Prerequisite: LAS 200 or permission of the department.

### **LAS 480-3 Practicum III**

Third term of work experience in the Latin American Studies Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: completion of LAS 390 and 60 units with a minimum CGPA of 2.75. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the second week of the term preceding the employment term.

### **LAS 490-3 Practicum IV**

Fourth term of work experience in the Latin American Studies Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: completion of LAS 480 and 75 units with a minimum CGPA of 2.75. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the second week of the term preceding the employment term.

### **LAS 493-3 Directed Readings**

Provides opportunity for individual reading and research under the supervision of a faculty member. Prerequisite: 90 units including LAS 200 and permission of the program advisor.

### **LAS 498-5 Capstone Project**

Independent reading and research under the supervision of a LAS associated faculty member. A research term paper will be required as the culmination of a LAS joint major. Prerequisite: 90 units, including LAS 200 and permission of the program advisor. Students who have taken LAS 498-5 prior to Fall 2006 may take this course for further credit.

### **LAS 800-4 Approaches to Research in Latin American Studies**

Provides an introduction to choosing a methodological framework for conducting the MA research project. Topics include epistemology of the human sciences, social research design and a review to qualitative, quantitative and mixed research methods. Students will gain experience in writing research proposals for external funding early in the term.

### **LAS 815-4 Theories of Latin American Development**

A synthetic introduction to historical and contemporary theories of development in Latin America. Topics include political economy of development, sociological theories of development, an introduction to neoliberalism, and the contemporary experience of globalization and development in Latin America.

### **LAS 825-4 Latin American History and Culture**

**LAS 835-4 Social and Political Change in Latin America**

A general overview of social and political change in Latin America, including revolutions, independence, transition to democracy, and contemporary social movements. Theoretical approaches may include social-movement theory, democratic theory, etc.

**LAS 851-5 Directed Readings in Latin American Studies**

Directed readings in a selected field of study under the direction of a single faculty member. An annotated bibliography and a term paper is required.

**LAS 898-6 MA Thesis**

## Liberal Arts LBRL Faculty of Arts and Social Sciences

**LBRL 101-3 Practicum I**

First term of work experience in the Liberal Arts Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: at least 30 units with a minimum CGPA of 3.0, including ENGL 099 and PHIL 001. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the term preceding the employment term.

**LBRL 201-3 Practicum II**

Second term of work experience in the Liberal Arts Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of LBRL 101 and at least 45 units with a minimum CGPA of 3.0. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the term preceding the employment term.

**LBRL 301-3 Practicum III**

Third term of work experience in the Liberal Arts Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of LBRL 201 and at least 60 units with a minimum CGPA of 3.0. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the term preceding the employment term.

**LBRL 401-3 Practicum IV**

Fourth term of work experience in the Liberal Arts Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of LBRL 301 and at least 75 units with a minimum CGPA of 3.0. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the term preceding the employment term.

**LBRL 402-3 Practicum V**

Optional fifth term of work experience in the Liberal Arts Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of LBRL 401 and at least 90 units with a minimum CGPA of 3.0. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinators by the end of the third week of the term preceding the employment term.

**LBRL 750-0 Practicum I**

First term of work experience in the Co-operative Education Program.

**LBRL 751-0 Practicum II**

Second term of work experience in the Co-operative Education Program.

**LBRL 752-0 Practicum III**

Third (optional) term of work experience in the Co-operative Education Program.

## Liberal Studies LS Faculty of Arts and Social Sciences

**LS 800-5 Thinking About Human Passion**

The first of two core courses that constitute an extended examination of the tension between reason and passion in human experience. This course will emphasize close reading and discussion of works, drawn from different cultures and epochs, that reflect on human passion.

**LS 801-5 The Capacity of Limits of Reason**

The second of two core courses that constitute an extended examination of the tension between reason and passion in human experience. This course will examine writings by some who have insisted on the indispensability of reasoning as a guide to action and the source of truth, as well as writings by some of those who on various grounds have cast doubt on this faith in human reason.

**LS 810-5 Self and Society**

This course will examine some aspects of the relationship between selfhood, as idea and experience, and social organization. Approaches to the topic will vary, but may involve scientific, social scientific, philosophical and aesthetic perspectives.

**LS 811-5 Tradition and Modernity**

This course will examine ways in which ideas of tradition and traditional societies conflict with forces of modernization and ideas of modernity.

**LS 812-5 Science and Human Values**

This course will deal with issues surrounding the nature of the scientific attitude, the growth of scientific knowledge and the impact of scientific and technological change. Specific attention will be given to the value implications of science and technology in relation to other forms of human understanding and experience.

**LS 813-5 Religious and Secular World Views**

This course will deal with the conflicts and continuities of secular and religious approaches to such fundamental issues as the origins of the universe and of the human species, human virtue, and human destiny.

**LS 814-5 Liberty and Authority**

This course will examine the tension between liberty and authority as expressed in some of the following: political and judicial ideas and systems; conflicting economic ideologies; personal relationships.

**LS 815-5 Organizing Social Realities: Gender, Class, Race, Nation**

This course will examine how distinctions among people create pattern and conflict, by studying some of the fundamental organizing concepts of society which both unite and divide people.

**LS 819-5 Selected Topics**

This course provides an opportunity for the occasional offering of a seminar course appropriate to the program but on a topic outside the regular courses.

**LS 829-5 Directed Study**

This course provides an opportunity for individual study on a topic of the student's choice, under the guidance of one or more faculty. Arrangements for this course must be approved by the graduate chair in advance of enrolment.

**LS 898-5 Liberal Studies Graduating Seminar**

The final seminar for those students in the graduate liberal studies program pursuing the course option MA. The seminar will revisit the themes raised in the two opening core seminars (LS 800 and 801).

**LS 990-2.5 Extended Essays (Completion)****LS 991-2.5 MA Project (Completion)****LS 998-5 MA Extended Essays**

Students will present two of their essays for formal examination in order to satisfy the Simon Fraser University requirements for a master's degree.

**LS 999-5 MA Project**

This course is for students choosing to satisfy part of the requirements for an MA in liberal studies by presenting a project for formal examination.

## Linguistics LING Faculty of Arts and Social Sciences

**LING 100-3 Communication and Language**

A non-theoretical approach to the study of language using examples from a variety of languages. Breadth-Social Sciences.

**LING 110-3 The Wonder of Words**

Study of the structure of words, the change of meaning of words, the change in form of words. Examples from English, French and other languages. A general interest course open to all students.

**LING 130-3 Practical Phonetics**

Practical training in the description of sounds used in language. Students in the First Nations Studies program should take LING 231 before LING 130.

**LING 160-3 Language, Culture and Society**

An introduction to language in its social and cultural dimensions. Students who have taken LING 260 prior to Fall 2008 may not take LING 160 for further credit.

**LING 200-3 Introduction to the Description of English Grammar**

A practical overview of English grammar based on linguistic principles, for those designing basic knowledge of language structure, grammatical categories and grammatical analysis. This course is particularly suited for students interested in the teaching of English as a second language.

**LING 220-3 Introduction to Linguistics**

An introduction to linguistic analysis.

**LING 221-3 Introduction to Phonetics and Phonology**

The principles of phonetic and phonological analysis. Prerequisite: LING 220.

**LING 222-3 Introduction to Syntax**

The principles of syntactic analysis. Prerequisite: LING 220.

**LING 231-3 Introduction to First Nations Language I**

An introductory course in the structure of a native language of the Americas, including phonetics, vocabulary, word formation, and grammatical constructions. The course will be based on a designated language to be named each time it is taught, and will usually be chosen from the Northwest Coast area. Students who have taken LING 431 in term 90-3 may not take this course for further credit. Recommended: students in the First Nations Studies program should take LING 231 before LING 130.

**LING 232-3 Introduction to First Nations Language II**

A continuation of the introductory course in a native language, including phonetics, vocabulary, word formation, and grammatical constructions. The course will be based on a designated language to be named each time it is taught, and will usually be chosen from the Northwest Coast area. Prerequisite: LING 231 in the same language. Students who have taken LING 432 in term 91-1 may not take this course for further credit.

**LING 241-3 Languages of the World**

A survey of the languages of the world. An examination of the linguistic structure of selected languages. Prerequisite: LING 220.

**LING 290-3 The Science of Speech**

Introduces the scientific study of speech, focusing on the mechanisms of speech production and perception, the ways in which speech is described and analyzed, the relationship between speech and technology, and the practical applications of phonetic science. Students who have taken LING 480 or 481 with similar content may not take this course for further credit.

**LING 295-3 Language and the Law**

An examination of how language is used by law enforcement, the courts, government, and the legal profession. Particular attention is paid to the contributions of linguistic science to a proper understanding of the role and usage of language in the legal domain.

**LING 301W-3 Linguistic Argumentation**

Advanced study of the styles of written argumentation that are used in linguistic research. Prerequisite: LING 222. Recommended: A lower division writing intensive (W) course. Writing.

**LING 309W-3 Sociolinguistics**

A systematic approach to the study of linguistic variation in different areal, social, and cultural settings. Prerequisite: LING 220 or 310. Recommended: LING 160 or 260. Students who have taken LING 409 may not take this course for further credit. Writing.

**LING 321-3 Phonology**

An overview of theoretical principles in phonology. Prerequisite: LING 221 or 310.

**LING 322-3 Syntax**

The study of sentence structure in language through a survey of constructions found in natural language data together with a consideration of syntactic theory. Prerequisite: LING 222 or 310.

**LING 323-3 Morphology**

Word structure in natural languages and its relationship to phonological and syntactic levels of grammar. Prerequisite: LING 221, 222; or 310.

**LING 324-3 Semantics**

Basic formal aspects of meaning (e.g. compositional semantics, truth conditional semantics and quantification in natural language) and how they are distinguished from pragmatic aspects of meaning. Prerequisite: LING 222 or 310. Quantitative.

**LING 330-3 Phonetics**

A survey of methods of speech sound description and transcription. Prerequisite: LING 221 or 310.

**LING 331-3 Description and Analysis of a First Nations Language I**

An intermediate course in the structure of a native language of the Americas, including writing systems, texts and examination of the general linguistic properties of the language and the language family in which it is situated. The course will be based on a designated language to be named each time it is taught, and will usually be chosen from the Northwest Coast area. Prerequisite: LING 232 or equivalent credit in the same language.

**LING 332-3 Description and Analysis of a First Nations Language II**

A continuation of the intermediate course in a native language of the Americas, including writing systems, texts, and examination of the general linguistic properties of the language and the language family in which it is situated. The course will be based on a designated language to be named each time it is taught, and will usually be chosen from the Northwest Coast area. Prerequisite: LING 331 or equivalent credit in the same language.

**LING 335-3 Topics in First Nations Language I**

Course content varies as required by First Nations language communities or learners. It will usually focus on having students gain insights into intermediate to advanced level topics on structural aspects of a particular First Nations language, with further emphasis on how those structural features of the languages can best be learned and taught in the classroom. Prerequisite: LING 130, 231, 332 or permission of instructor. Recommended: LING 360.

**LING 350-3 First Language Acquisition**

Introduction to the study of language acquisition from the point of view of linguistic structure. Prerequisite: LING 220, 221; or 310. Students who have taken LING 250 may not take this course for further credit.

**LING 360-3 Linguistics and Language Teaching**

Theoretical and practical aspects of second language learning. Prerequisite: LING 220; or 310.

**LING 362-3 English as a Second Language: Theory**

Application of linguistic principles to the teaching of English as a second language. Prerequisite: LING 220, 221; or 310.

**LING 363-3 English as a Second Language: Practice**

Implementation of linguistic principles in the teaching of English as a second language, including a practical experience with learners of English. Prerequisite: LING 360, 362. This course is graded on a pass/fail basis.

**LING 370-3 Linguistics Practicum I**

First semester of work experience in the Linguistics Co-operative Education Program. Credits from this course do not count towards the credits required for an SFU degree. Prerequisite: normally 30 units, including LING 220 and four other courses in Linguistics, with a minimum CGPA of 2.75.

**LING 371-3 Linguistics Practicum II**

Second term of work experience in the Linguistics Co-operative Education Program. Units from this course do not count towards the units for an SFU degree. Prerequisite: successful completion of LING 370 and 45 units with a minimum CGPA of 2.75.

**LING 400-3 Formal Linguistics**

Formal systems and their relation to linguistic methods and theory. Topics include the mathematical properties of natural languages, and rigorously defined frameworks for linguistic analysis and their formal properties. Prerequisite: LING 322. Recommended: PHIL 210 Quantitative.

**LING 401-3 Topics in Phonetics**

Advanced training in speech sound description and analysis in the impressionistic and instrumental modes. Prerequisite: LING 330.

**LING 406-3 Topics in Semantics**

Additional topics in formal semantics, such as intensionality, lambda abstraction, generalized quantifiers, dynamic semantics. Prerequisite: LING 322, 324, plus LING 301. Recommended: PHIL 210. Quantitative.

**LING 407-3 Historical Linguistics**

The development of languages and language families through time; genetic grouping, the comparative method, reconstruction, etymology, universals and language change. Prerequisite: LING 321, 322 and 323, plus LING 301.

**LING 408-3 Field Linguistics**

The investigation and description of an unfamiliar language. Prerequisite: LING 221 and 222; or 310.

**LING 410-3 Theories of Applied Linguistics**

Explores the range of theories that are used within applied linguistics, including issues of theory evaluation and application. Prerequisite: LING 360 and 9 units of upper division Linguistics. Students who

have taken LING 480 or LING 481 with this topic may not take this course for further credit.

**LING 411-3 Topics in Applied Phonetics**

Application of principles from phonetics to a number of practical problems in such areas as second language learning and teaching, forensics, communications, commerce and the arts. Prerequisite: LING 321 or 330, and 9 additional units of upper division Linguistics. Students who have taken LING 480 or LING 481 with this topic may not take this course for further credit.

**LING 412-3 Topics in Applied Grammar and Discourse**

Explores topics in applied grammar and discourse, including specific theoretical constructs and analyses, as well as applications to areas such as language learning, language teaching, and corpus studies. Prerequisite: LING 222, LING 350 or 360, and 9 units of upper division Linguistics. Students who have taken LING 480 with this topic may not take this course for further credit.

**LING 415-3 Neurolinguistics**

Explores language as a system of the human brain, including specific topics such as the neuroanatomy and neurophysiology of language; language production, perception and processing; bilingualism, language learning and brain plasticity; and aphasia, dyslexia, deafness and sign languages. Prerequisite: 12 units of upper division linguistic courses. Students who have taken LING 480 with this topic may not take this course for further credit.

**LING 430-3 Native American Languages**

Structural and genetic characteristics of Native languages of America, with special emphasis on languages of the Northwest. Detailed examination of one language or language family. Prerequisite: 12 upper division linguistics units. Recommended: LING 241 and 323.

**LING 431-3 Language Structures I**

Detailed examination of the structure of a selected language. Prerequisite: LING 221 and 222; or 310.

**LING 432-3 Language Structures II**

Detailed examination of the structure of a selected language. Prerequisite: LING 221 and 222; or 310.

**LING 433-3 First Nations Language Mentoring I**

Intended for advanced learners of a particular First Nations language. It will enable them to get advanced vocabulary and/or grammatical skills in the First Nations language through individualized practice with fluent speakers (usually elders) of that language. Enrollment in this course requires the prior approval of the Department of Linguistics and the local First Nations community. Students will be evaluated on the basis of the individualized goals and objects set at the beginning of the course. Prerequisite: LING 332 or permission of course supervisor. This course is graded on a pass/fail basis.

**LING 434-3 First Nations Language Mentoring II**

A follow up to LING 433. It will involve students, on an individualized basis, carrying out 39 hours of learning with a mentor, who is a fluent speaker (usually First Nations elder) or a particular First Nations language. Prerequisite: LING 433 or permission of course supervisor. This course is graded on a pass/fail basis. Recommended: LING 431 and 432.

**LING 435-3 Topics in First Nations Language II**

Course content varies as required by First Nations language communities or learners. It will usually focus on having students gain insights into intermediate to advanced level topics on structural aspects of a particular First Nations language, with further emphasis on how those structural features of the languages can best be learned and taught in the classroom. Prerequisite: LING 220, 332 or permission of instructor. Recommended: LING 360, 431 and 432.

**LING 441-3 Linguistic Universals and Typology**

A survey of the main language types found in the world with reference to their structural properties; the categorization of language types as a consequence of linguistic universals. Prerequisite: Two of LING 321, 322 or 323. Recommended: LING 241.

**LING 470-3 Linguistics Practicum III**

Third term of work experience in the Linguistics Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of LING 371 and 60 units with a minimum CGPA of 2.75.

**LING 471-3 Linguistics Practicum IV**

Fourth term of work experience in the Linguistics Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of LING 470 and 75 units with a minimum CGPA of 2.75.

**LING 480-3 Topics in Linguistics I**

Investigation of a selected area of linguistic research. Prerequisite: Requirements will vary according to the topic offered.

**LING 481-3 Topics in Linguistics II**

Investigation of a selected area of linguistic research. Prerequisite: Requirements will vary according to the topic offered.

**LING 482W-3 Topics in Linguistics III**

Investigation of a selected area of linguistic research. The course will be writing-intensive. Prerequisite: requirements will vary according to the topic offered. Writing.

**LING 490-3 Honors Essay**

Topic of a specific nature to be agreed upon by the student and a particular faculty member. Prerequisite: a minimum of 35 units of upper division linguistic courses counting toward the honors degree.

**LING 800-4 Phonology****LING 801-4 Syntax****LING 802-4 Semantics****LING 803-4 Theory****LING 804-4 Field Methods****LING 805-4 Historical and Comparative Linguistics****LING 806-4 Sociolinguistics****LING 807-4 Computational Linguistics****LING 809-4 Morphology****LING 810-4 Topics in Linguistics I****LING 811-4 Topics in Linguistics II****LING 812-4 Topics in Linguistics III****LING 813-4 Topics in Linguistics IV****LING 820-4 Formal Linguistics****LING 821-4 Phonetics****LING 850-4 Psycholinguistic Aspects of Language Learning****LING 851-4 Research Techniques and Experimental Design****LING 855-4 Applied Linguistics I****LING 890-3 Graduate Seminar****LING 896-4 Directed Research****LING 897-4 Research Seminar****LING 898-6 MA Thesis****LING 899-6 PhD Thesis****MTEC 601-1 Technology and Supply Chain Management**

This graduate course introduces students to the central ideas of supply chain management. The web enabled approach is emphasized and compared with traditional methods. Contemporary best practices are researched and discussed.

**MTEC 602-1 Developing New Products**

This course explores the strategic and operational aspects of new product development including critical success factors. It also provides a focus on the pre-development phase of product innovation.

**MTEC 603-1 Branding**

This course focuses on the ways that brands acquire and sustain value in the marketplace. Students study the meaning, uses, processes, and methodologies for creating effective and winning brands. The evolution of brand value strategies is also explored.

**MTEC 604-1 Internet Advertising**

The focus is on the issues, theories, tools, and practice of marketing communications in the Internet marketplace and the role of Internet advertising to businesses. Students will acquire the analytical skills that are needed to plan, design, implement and evaluate internet advertising campaigns.

**MTEC 605-1 Management of High Tech Professionals**

The course is focused on how to develop competitive advantage in e-business through leadership and the effective management of people. Topics examined include corporate culture, change management, learning organizations, and various human resource practices.

**MTEC 606-1 Global Business in Technology Industries**

The course is focused on key issues in conducting international business. Students study strategy formulation for international markets, as well as the important role of national culture in business. In addition, strategic alliances in technology companies are examined.

**MTEC 607-1 Strategic Management of Innovation**

This course reviews some fundamental concepts of strategy in the context of technological innovation, examines the role of core competencies in technology development, and identifies and discusses the various components or dimensions that make up a technology strategy. Case studies are used to illustrate theory with application in the e-business context.

**MTEC 608-1 High Tech Entrepreneurship**

In today's age of rapid technological progress, ventures are being created daily to satisfy new business needs. The creation of new technology-based ventures is becoming a more popular career choice for science and technology professionals with entrepreneurial ambition. This is a fast-paced, hands-on course that takes the student through the key stages of new venture creation including researching the product opportunity, protecting the venture's intellectual property, planning the venture's seed and start-up stages, determining the financial needs and resources, developing the business plan and valuing the venture.

**MTEC 609-1 E-Customer Relationship Management**

The course is focused on the evolution of customer relationship management from mortar and brick establishments to the Web. Focus is on issues of e-loyalty and customer services, as well as current practices.

**MTEC 610-1 The Social Context of E-Business**

The human element on the Web is important. In this course focus is on the development of trust in online communities, how virtual teams operate successfully,

and ethical issues that impact online interaction, with particular emphasis on e-business.

**MTEC 611-1 Knowledge Management Tools and Technologies**

This course investigates the various information systems and technologies used for implementing knowledge management practices within an organization. It describes a framework for analyzing these knowledge services (KSS). Industry examples of knowledge services are discussed in terms of infrastructure services, core services and packaged services.

**MTEC 613-1 E-Business Strategy and Models**

Effective strategy is central to e-business success. In this course, emphasis is on examination on various strategies and models as they apply in e-business. Issues, strategic choices and challenges are highlighted related to e-business implementation.

**MTEC 691-693-1 Directed Studies****MTEC 694-696-2 Directed Studies****MTEC 697-699-3 Directed Studies****Management and Systems Science  
MSSC****Faculty of Science****MSSC 180-1 Undergraduate Seminar in Management and Systems Science**

A seminar primarily for students undertaking a major or an honors program in management and systems science. Prerequisite: Major in Management and Systems Science or permission of the program director. Students with credit for MSSC 480 cannot receive credit for MSSC 180.

**MSSC 481-1 Undergraduate Seminar in Management and Systems Science**

A seminar primarily for students undertaking a major or an honors program in management and systems science. Prerequisite: MSSC 180.

**Marine Science MASC  
Faculty of Science****MASC 400-6 Directed Studies**

A course of directed studies under the supervision of a member of faculty. The study will involve a research project approved by the supervisor in the field of interest of the student, and will be designed to take maximum advantage of the laboratory and/or field opportunities offered by the Bamfield Marine Sciences Centre.

**MASC 401-3 Directed Studies in Marine Sciences**

A course of directed studies under the supervision of a member of faculty. The study will involve a research project approved by the supervisor in the field of interest of the student, and will be designed to take maximum advantage of the laboratory and field opportunities offered by the Marine Sciences Centre. Prerequisite: Offerings of the MASC courses may vary from summer to summer because instructors are drawn from different universities. For that reason, prerequisites may vary slightly. In general, upper division standing in biology is required, and admission is usually competitive. Students are encouraged to consult the brochure published each fall by the Bamfield Marine Sciences Centre for full and specific details. The brochure will be available from the Department of Biological Sciences.

**MASC 410-6 Marine Invertebrate Zoology**

A survey of the marine phyla, with emphasis on the benthic fauna in the vicinity of the Bamfield Marine Sciences Centre. The course includes lectures, laboratory periods, field collection, identification, and observation. Emphasis is placed on the study of living specimens in the laboratory and in the field.

**Management and Technology  
MTEC****Faculty of Applied Sciences****MTEC 600-1 Services Management**

This course introduces graduate students to the various services related business models, both B2C and B2B, that are established and evolving in the realm of e-Business. The issues of integration of web based services with traditional brick and mortar models are also explored.



Prerequisite: Offerings of the MASC courses may vary from summer to summer because instructors are drawn from different universities. For that reason, prerequisites may vary slightly. In general, upper division standing in biology is required, and admission is usually competitive. Students are encouraged to consult the brochure published each fall by the Bamfield Marine Sciences Centre for full and specific details. The brochure will be available from the Department of Biological Sciences.

#### **MASC 411-6 Comparative Embryology of Marine Invertebrates**

A comprehensive study of development of marine invertebrates available at the Bamfield Marine Sciences Centre including all major phyla and most of the minor phyla. Lectures will cover gametogenesis, fertilization, regeneration, cell lineage, mosaic and regulated development, larval development and metamorphosis of the different groups. Laboratory work will include methods and techniques of obtaining and handling gametes, preparation and maintenance of larval cultures and observation of development up to metamorphosis if possible. Some selected and clearly defined classical experiments will be performed. Efforts will also be made to study various pelagic larvae. Prerequisite: Offerings of the MASC courses may vary from summer to summer because instructors are drawn from different universities. For that reason, prerequisites may vary slightly. In general, upper division standing in biology is required, and admission is usually competitive. Students are encouraged to consult the brochure published each fall by the Bamfield Marine Sciences Centre for full and specific details. The brochure will be available from the Department of Biological Sciences.

#### **MASC 412-6 Biology of Fishes**

Classification, physiology, ecology, behavior and zoogeography of fishes with particular emphasis on those in the marine environment of the British Columbia coast. Local collections from a variety of habitats will be used for experimental studies. Prerequisite: Offerings of the MASC courses may vary from summer to summer because instructors are drawn from different universities. For that reason, prerequisites may vary slightly. In general, upper division standing in biology is required, and admission is usually competitive. Students are encouraged to consult the brochure published each fall by the Bamfield Marine Sciences Centre for full and specific details. The brochure will be available from the Department of Biological Sciences.

#### **MASC 415-3 Structure and Function in Animals**

The course will focus on the structure of marine animals and their adaptations to the marine environment. Neurobiology, developmental biology, functional morphology and other topics will be covered. Prerequisite: Offerings of the MASC courses may vary from summer to summer because instructors are drawn from different universities. For that reason, prerequisites may vary slightly. In general, upper division standing in biology is required, and admission is usually competitive. Students are encouraged to consult the brochure published each fall by the Bamfield Marine Sciences Centre for full and specific details. The brochure will be available from the Department of Biological Sciences.

#### **MASC 425-3 Ecological Adaptations of Seaweeds**

The course will explore morphological physiological, genetic and reproductive adaptations of seaweeds to their natural and man-altered environments. Prerequisite: Offerings of the MASC courses may vary from summer to summer because instructors are drawn from different universities. For that reason, prerequisites may vary slightly. In general, upper division standing in biology is required, and admission

is usually competitive. Students are encouraged to consult the brochure published each fall by the Bamfield Marine Sciences Centre for full and specific details. The brochure will be available from the Department of Biological Sciences.

#### **MASC 430-6 Marine Ecology**

An analytical approach to biotic associations in the marine environment. Opportunities will be provided for study of the intertidal realm in exposed and protected areas and of beaches and estuaries in the vicinity of the Bamfield Marine Sciences Centre; plankton studies and investigations of the sub-tidal and benthic environments by diving and dredging are envisaged. Prerequisite: Offerings of the MASC courses may vary from summer to summer because instructors are drawn from different universities. For that reason, prerequisites may vary slightly. In general, upper division standing in biology is required, and admission is usually competitive. Students are encouraged to consult the brochure published each fall by the Bamfield Marine Sciences Centre for full and specific details. The brochure will be available from the Department of Biological Sciences.

#### **MASC 437-3 Marine Population Ecology and Dynamics**

An analytical approach to the study of marine ecology and marine populations. Intertidal and subtidal communities will be examined, with emphasis on the biota of the Barkley Sound region. Prerequisite: Offerings of the MASC courses may vary from summer to summer because instructors are drawn from different universities. For that reason, prerequisites may vary slightly. In general, upper division standing in biology is required, and admission is usually competitive. Students are encouraged to consult the brochure published each fall by the Bamfield Marine Sciences Centre for full and specific details. The brochure will be available from the Department of Biological Sciences.

#### **MASC 440-6 Biology of Marine Birds**

The interrelationship of birds and the marine environment. Lectures will emphasize the systematics and ecological relationships, behavior, life histories, movements and conservation of marine birds. Census techniques and methods of studying marine birds in the field will be stressed during field trips in the Barkley Sound region. Seabird identification, classification, morphology, plumages and molt will be examined in the laboratory. Prerequisite: Offerings of the MASC courses may vary from summer to summer because instructors are drawn from different universities. For that reason, prerequisites may vary slightly. In general, upper division standing in biology is required, and admission is usually competitive. Students are encouraged to consult the brochure published each fall by the Bamfield Marine Sciences Centre for full and specific details. The brochure will be available from the Department of Biological Sciences.

#### **MASC 445-6 Biology of Marine Mammals**

A survey course covering systematics and distribution of marine mammals, their sensory capabilities and physiology, with special emphasis on the cetacea. The course includes lectures, laboratory periods and numerous field trips in the Barkley Sound region. The course will involve an independent field study. Prerequisite: offerings of the MASC courses may vary from summer to summer because instructors are drawn from different universities. For that reason, prerequisites may vary slightly. In general, upper division standing in biology is required, and admission is usually competitive. Students are encouraged to consult the brochure published each fall by the Bamfield Marine Sciences Centre for full and specific details. The brochure will be available from the Department of Biological Sciences.

#### **MASC 446-6 Comparative Ethology**

A comparative study of marine animals (vertebrate and invertebrate) emphasizing behavioral description, underlying physiological mechanisms, the biological significance of behavior and behavioral evolution. The course will include independent laboratory and field studies. Prerequisite: Offerings of the MASC courses may vary from summer to summer because instructors are drawn from different universities. For that reason, prerequisites may vary slightly. In general, upper division standing in biology is required, and admission is usually competitive. Students are encouraged to consult the brochure published each fall by the Bamfield Marine Sciences Centre for full and specific details. The brochure will be available from the Department of Biological Sciences.

#### **MASC 470-479 Special Topics in Marine Biology**

Offered, as opportunities arise, by visiting scientists who are working at the Bamfield Marine Sciences Centre and are prepared to offer a course of either three or six weeks. Courses will be of a specialized nature. Prerequisite: will vary and will be announced in advance of the course offering. Variable units 3, 6.

#### **MASC 480-3 Seminars and Papers in Marine Science**

A series of weekly seminars covering current topics of interest in the Marine Sciences. Seminars will be presented Bamfield Marine Sciences Centre researchers, graduate students and visiting scientists as well as by the students themselves. Prerequisite: Offerings of the MASC courses may vary from summer to summer because instructors are drawn from different universities. For that reason, prerequisites may vary slightly. In general, upper division standing in biology is required, and admission is usually competitive. Students are encouraged to consult the brochure published each fall by the Bamfield Marine Sciences Centre for full and specific details. The brochure will be available from the Department of Biological Sciences.

#### **MASC 500-3 Directed Studies**

A graduate level course of directed studies under the supervision of a member of faculty. The study will involve a research project approved by the supervisor in the field of interest of the student, and will be designed to take maximum advantage of the laboratory and/or field opportunities offered by the Bamfield Marine Sciences Centre.

#### **MASC 501-503-3 Special Topics**

Courses offered, as opportunities arise, by distinguished scientists who are visiting the Bamfield Marine Sciences Centre and are prepared to offer a course extending over a three week period.

#### **MASC 504-506-6 Special Topics**

Course offered, as opportunities arise, by distinguished scientists who are visiting the Bamfield Marine Sciences Centre and are prepared to offer a course extending over a six week period.

## **Mathematics MATH Faculty of Science**

#### **MATH 100-3 Precalculus**

Designed to prepare students for first year Calculus courses. Topics include language and notation of mathematics; problem solving; algebraic, exponential, logarithmic and trigonometric functions and their graphs. Prerequisite: BC principles of mathematics 11 (or equivalent) with a grade of at least B-, or BC principles of mathematics 12 (or equivalent) with a grade of at least C, or SFU FAN X99 course with a grade of at least B-, or achieving a satisfactory grade on the Simon Fraser University Quantitative Placement Test. Students with credit for MATH 150 or 151 or 154 or 157 may not take MATH 100 for further credit. MATH 100 may not be counted towards the

mathematics minor, major or honors degree requirements. Quantitative.

### **MATH 113-3 Euclidean Geometry**

Plane Euclidean geometry, congruence and similarity. Theory of parallels. Polygonal areas. Pythagorean theorem. Geometrical constructions. Prerequisite: BC principles of mathematics 11 (or equivalent) with a grade of at least B- or SFU FAN X99 with a grade of at least C, or achieving a satisfactory grade on the Simon Fraser University Quantitative Placement Test. Intended to be accessible to students who are not specializing in mathematics. Particularly recommended for students considering a career in teaching secondary or middle school mathematics. Quantitative.

### **MATH 130-3 Geometry for Computer Graphics**

An introductory course in the application of geometry and linear algebra principles to computer graphical representation. Vector and matrix algebra, two and three dimensional transformations, homogeneous coordinates, perspective geometry. Prerequisite: Principles of Mathematics 12 or Applications of Mathematics 12, both with a grade of at least B. Quantitative.

### **MATH 150-4 Calculus I with Review**

Designed for students specializing in mathematics, physics, chemistry, computing science and engineering. Topics as for Math 151 with a more extensive review of functions, their properties and their graphs. Recommended for students with no previous knowledge of Calculus. In addition to regularly scheduled lectures, students enrolled in this course are encouraged to come for assistance to the Calculus Workshop (Burnaby), or Math Open Lab (Surrey). Prerequisite: BC principles of mathematics 12 (or equivalent) with a grade of at least B+ (75%); or MATH 100 with a grade of at least B-, or achieving a satisfactory grade on the Simon Fraser University Calculus Readiness Test. Students with credit for either MATH 151, 154 or 157 may not take MATH 150 for further credit. Quantitative.

### **MATH 151-3 Calculus I**

Designed for students specializing in mathematics, physics, chemistry, computing science and engineering. Logarithmic and exponential functions, trigonometric functions, inverse functions. Limits, continuity, and derivatives. Techniques of differentiation, including logarithmic and implicit differentiation. The Mean Value Theorem. Applications of Differentiation including extrema, curve sketching, related rates, Newton's method. Antiderivatives and applications. Conic sections, polar coordinates, parametric curves. Prerequisite: BC principles of mathematics 12 (or equivalent) with a grade of at least A, or MATH 100 with a grade of at least B-, or achieving a satisfactory grade on the Simon Fraser University Calculus Readiness Test. Students with credit for either MATH 150, 154 or 157 may not take MATH 151 for further credit. Quantitative.

### **MATH 152-3 Calculus II**

Riemann sum, Fundamental Theorem of Calculus, definite, indefinite and improper integrals, approximate integration, integration techniques, applications of integration. First-order separable differential equations. Sequences and series, series tests, power series, convergence and applications of power series. Complex numbers. Prerequisite: MATH 150, 151 or 154. Students may also use MATH 157 with a grade of at least B. Students with credit for MATH 155 or 158 may not take MATH 152 for further credit. Quantitative.

### **MATH 154-3 Calculus I for the Biological Sciences**

Designed for students specializing in the biological and medical sciences. Topics include: limits, growth rate and the derivative; logarithmic, exponential and

trigonometric functions and their applications in population study; optimization and approximation methods. Prerequisite: BC principles of mathematics 12 (or equivalent) with a grade of at least B; or MATH 100 with a grade of at least C, or achieving a satisfactory grade on the Simon Fraser University Calculus Readiness Test. Students with credit for either MATH 150, 151 or 157 may not take MATH 154 for further credit. Quantitative.

### **MATH 155-3 Calculus II for the Biological Sciences**

The integral and its applications, partial derivatives, differential equations and their applications in ecology, mathematical models of biological processes. Prerequisite: MATH 150, 151 or 154; or MATH 157 with a grade of at least B. Students with credit for MATH 152 or 158 may not take MATH 155 for further credit. Quantitative.

### **MATH 157-3 Calculus for the Social Sciences I**

Designed for students specializing in business or the social sciences. Topics include: limits, growth rate and the derivative; logarithmic exponential and trigonometric functions and their application to business, economics, optimization and approximation methods; functions of several variables. Prerequisite: BC principles of mathematics 12 (or equivalent) with a grade of at least B; or MATH 100 with a grade of at least C, or achieving a satisfactory grade on the Simon Fraser University Calculus Readiness Test. Students with credit for either MATH 150, 151 or 154 may not take MATH 157 for further credit. Quantitative.

### **MATH 158-3 Calculus for the Social Sciences II**

Theory of integration and its applications; introduction to multivariable calculus with emphasis on partial derivatives and their applications; introduction to differential equations with emphasis on some special first-order equations and their applications to economics and social sciences; continuous probability models; sequences and series. Prerequisite: MATH 150 or 151 or 154 or 157. Students with credit for MATH 152 or 155 may not take MATH 158 for further credit. Quantitative.

### **MATH 160W-3 Mathematics in Action**

Students take an active role in modeling mathematics of change through a guided, investigative, discovery-based approach of learning that mimics past and present research methods in mathematics. The course is divided into several modules, each of which centers around a major application in mathematics using calculus such as logistic growth (e.g. spread of diseases), optimization (e.g. cost effective oil pipe line routes), approximation (e.g. security system design), area calculation (e.g. tile design) and volume calculation (e.g. optimal ice cream cone) as well as a function review module and calculus history module. The history module allows students to gain a broad understanding of the developments of calculus and how this branch of mathematics helped to shape other branches of mathematics as well as the sciences. The instructional approach emphasizes conceptual understanding over rote drill and student write, present, and defend their mathematical discoveries. Prerequisite: Either BC principles of mathematics 12 (or equivalent) or BC applications of mathematics 12, or MATH 100 with a grade of at least C-. Writing/Quantitative/Breadth-Science.

### **MATH 178W-3 Fractals and Chaos**

Introduction to fractal geometry and chaos theory, with a survey of applications of these topics in modern mathematics and in other areas outside of mathematics including music, art, computer graphics, finance, and the sciences. Designed to be accessible to students with only high school mathematics. Prerequisite: BC principles of mathematics 12 (or

equivalent), or MATH 100 with a grade of at least C-. Writing/Quantitative/Breadth-Science.

### **MATH 190-4 Principles of Mathematics for Teachers**

Mathematical ideas involved in number systems and geometry in the elementary school curriculum. Overview of the historical development of these ideas, and their place in contemporary mathematics. Language and notation of mathematics; problem solving; whole number, fractional number, and rational number systems. Plane geometry, solid geometry, metric geometry, and the geometry of the motion. Introduction to probability and statistics. Prerequisite: BC principles of mathematics 11 (or equivalent) with a grade of at least B- or SFU FAN X99 with a grade of at least C, or achieving a satisfactory grade on the Simon Fraser University Quantitative Placement Test. This course may not be counted toward the Mathematics minor, major or honors degree requirements. Students who have taken, have received transfer credit for, or are currently taking MATH 150, 151, 154 or 157 may not take MATH 190 for credit without permission from the Department of Mathematics. Intended to be particularly accessible to students who are not specializing in mathematics. Quantitative.

### **MATH 197-3 Hitchhiker's Guide to Everyday Math**

Should you buy a ticket for 6/49 or Super 7? If you tested positive for a rare disease, what is the chance that you actually do have it? What are likely to be the consequences of moving to a single transferable vote voting system from a "first past the post" voting system? What is the connection between Chinese dragging noodles, E. coli bacteria and interest on your credit card? These are some of the questions we will be investigating in this course. We will also look into the use, misuse and abuse of mathematics in the media and advertisements. Prerequisite: BC principles of mathematics 11 or equivalent. Students who have taken, have received transfer credit for, or are currently taking MATH 150, 151, 154 or 157 may not take MATH 197 for credit without permission from the Department of Mathematics. This course may not be counted toward the Mathematics minor, major or honors degree requirements. Quantitative.

### **MATH 198-4 Introduction to Quantitative Reasoning**

Designed specifically for students in the Integrated Studies programs to help them develop their abilities to interpret and reason with quantitative information. Topics covered include logical reasoning and problem solving, counting and probability, mathematics of finance, and linear and exponential modeling. Prerequisite: BC Principles of Mathematics 11 (or equivalent) with a grade of at least C, taken within the past 10 years, or Simon Fraser University FAN X99 course with a grade of at least C. This course is only open for credit to students in the Integrated Studies programs within the Bachelor of General Studies degree. Quantitative.

### **MATH 208-3 Introduction to Operations Research**

Introduction to methods of operations research: linear and nonlinear programming, simulation, and heuristic methods. Applications to transportation, assignment, scheduling, and game theory. Exposure to mathematical models of industry and technology. Emphasis on computation for analysis and simulation. Prerequisite: MATH 152 or 155 or 158, and CMPT 101 or 104 or 125 or 126.

### **MATH 210-3 Calculus for Design Sciences**

This course is designed for students specializing in arts and design technology. Topics include theory of integration and its applications; series; introduction to first- and second-order differential equations and their applications to signals and systems; Laplace integral

transform and introduction to Fourier integral transform as effective tools to analyze and design multimedia systems. Prerequisite: MATH 150 or 151. Students with credit for TECH 147, ITEC 274, ITEC 276, MATH 152, MATH 155, and MATH 158 may not take this course for further credit. Quantitative.

### **MATH 232-3 Applied Linear Algebra**

Linear equations, matrices, determinants. Introduction to vector spaces and linear transformations and bases. Inner products and orthogonality. Eigenvalues and eigenvectors; diagonalization. Inner products and orthogonality; least squares problems. Applications. The course emphasizes matrix and vector calculations and applications. Prerequisite: MATH 150 or 151 (or equivalent) or MACM 101 or MATH 154/157 with a grade of at least B. Students with credit for MATH 240 cannot take MATH 232 for further credit. Quantitative.

### **MATH 240-3 Algebra I: Linear Algebra**

Linear equations, matrices, determinants. Real and abstract vector spaces, subspaces and linear transformations; basis and change of basis. Eigenvalues and eigenvectors; diagonalisation. Inner products and orthogonality; least squares problems. Applications. The course has a more theoretical emphasis than MATH 232, including proving true statements and giving counterexamples. Prerequisite: MATH 150 or 151 (or equivalent) or MACM 101 or MATH 154/157 with a grade of at least B+. Students with credit for MATH 232 cannot take MATH 240 for further credit. Quantitative.

### **MATH 242-3 Introduction to Analysis I**

Mathematical induction. Limits of real sequences and real functions. Continuity and its consequences. The mean value theorem. The fundamental theorem of calculus. Series. Prerequisite: MATH 152 or 155. Quantitative.

### **MATH 251-3 Calculus III**

Rectangular, cylindrical and spherical coordinates. Vectors, lines, planes, cylinders, quadric surfaces. Vector functions, curves, motion in space. Differential and integral calculus of several variables. Vector fields, line integrals, fundamental theorem for line integrals, Green's theorem. Prerequisite: MATH 152 or 155; or MATH 158 with a grade of at least B. Recommended: It is recommended that MATH 240 or 232 be taken before or concurrently with MATH 251. Quantitative.

### **MATH 252-3 Vector Calculus**

Vector calculus, divergence, gradient and curl; line, surface and volume integrals; conservative fields, theorems of Gauss, Green and Stokes; general curvilinear coordinates and tensor notation. Introduction to orthogonality of functions, orthogonal polynomials and Fourier series. Prerequisite: MATH 240 or 232, and 251. Students with credit for MATH 254 may not take MATH 252 for further credit. Quantitative.

### **MATH 254-3 Vector and Complex Analysis for Applied Sciences**

Designed for students in the Engineering Science program. Combines a continuation of the study of vector calculus from MATH 251 with an introduction to functions of a complex variable. Vector functions of a single variable, space curves, scalar and vector fields, conservative fields, surface and volume integrals, and theorems of Gauss, Green and Stokes. Functions of a complex variable, differentiability, contour integrals, Cauchy's theorem. Taylor and Laurent expansion, method of residues, integral transform and conformal mapping. Prerequisite: MATH 240 or 232, and MATH 251. Students with credit for MATH 322 or MATH 252 may not take this course for further credit. Quantitative.

### **MATH 291-292-3 Selected Topics in Mathematics**

Topics will vary from term to term depending on faculty availability and student interest. Prerequisites will be specified according to the particular topic or topics offered.

### **MATH 302-3 Computing with Mathematics**

Computational techniques have become a cornerstone of modern mathematics. Each offering explores the mathematics of an area of advanced technology. Potential course topics include: image processing; codes and ciphers; bioinformatics; experimental mathematics; and modeling and simulation. Prerequisite: MATH 152 and 232 or 240. There may be additional prerequisites depending on the course's topics. Recommended: MACM 202 or equivalent computing experience. Department permission is required to complete this course more than once.

### **MATH 303-3 Perspectives on Geometry**

Geometry is the mathematics of form and space, and is vital to our understanding of both the physical and virtual worlds. Designing computer graphics is an example of using mathematics to encode spatial relationships. Potential topics include: Euclidean and non-Euclidean geometries, computational geometry, differential geometry, and symmetry. Prerequisite: MATH 152 and 232 or 240. There may be additional prerequisites depending on the course's topics. Department permission is required to complete this course more than once.

### **MATH 304-3 Quantifying Uncertainty**

Probability theory is the mathematics of uncertainty as in weather forecasting, genetics, the financial markets, and even your choice of line at the grocery. Here we explore models that quantify chance in daily life. Potential topics are: game theory, queueing theory, random processes, and the mathematics of finance. Prerequisite: MATH 152 and 232 or 240. There may be additional prerequisites depending on the course's topics. Department permission is required to complete this course more than once.

### **MATH 308-3 Introduction to Optimization**

Convex sets and convex functions. Minimization of convex functions. Lagrange multipliers. Linear programming and duality, Applications and computation. Prerequisite: MATH 240 or 232. Recommended: MACM 201. Intended to be particularly accessible to students who are not specializing in mathematics. Quantitative.

### **MATH 309-3 Continuous Optimization**

Theoretical and computational methods for investigating the minimum of a function of several real variables with and without inequality constraints. Applications to operations research, model fitting, and economic theory. Prerequisite: MATH 240 or 232, and 251. Recommended: MATH 308. Quantitative.

### **MATH 310-3 Introduction to Ordinary Differential Equations**

First-order differential equations, second- and higher-order linear equations, series solutions, introduction to Laplace transform, systems and numerical methods, applications in the physical, biological and social sciences. Prerequisite: MATH 152 or 155 (or MATH 158 with a grade of A or B) and MATH 240 or 232. Quantitative.

### **MATH 314-3 Introduction to Fourier Methods and Partial Differential Equations**

Fourier series, ODE boundary and eigenvalue problems. Separation of variables for the diffusion wave and Laplace/Poisson equations. Polar and spherical co-ordinate systems. Symbolic and numerical computing, and graphics for PDEs. Prerequisite: MATH 252 (or 254) and 310, and computing experience. Quantitative.

### **MATH 320-3 Introduction to Analysis II**

Sequences and series of functions, topology of sets in Euclidean space, introduction to metric spaces, functions of several variables. Prerequisite: MATH 242 and 251. Quantitative.

### **MATH 322-3 Complex Variables**

Functions of a complex variable, differentiability, contour integrals, Cauchy's theorem, Taylor and Laurent expansions, method of residues. Prerequisite: MATH 251. Students with credit for MATH 424 may not take MATH 322 for further credit. Quantitative.

### **MATH 336-3 Job Practicum I**

This is the first term of work experience in a co-operative education program available to mathematics students. Interested students should contact departmental advisors as early in their careers as possible, for proper counselling. Units from this course do not count towards the units required for an SFU degree. Prerequisite: students must apply to and receive permission from the co-op co-ordinator at least one, preferably two, terms in advance. They will normally be required to have completed 45 units with a GPA of 2.5. This course will be graded on a pass/withdraw basis. A course fee is required.

### **MATH 337-3 Job Practicum II**

This is the second term of work experience in a co-operative education program available to mathematics students. Units from this course do not count towards the units required for an SFU degree. Prerequisite: MATH 336 and permission of the co-op co-ordinator; students must apply at least one term in advance. This course will be graded on a pass/withdraw basis. A course fee is required.

### **MATH 338-3 Advanced Linear Algebra**

Linear Algebra. Vector space and matrix theory. Prerequisite: MATH 340 or 332 or permission of the instructor. Students with credit for MATH 438 cannot take MATH 338 for further credit. Quantitative.

### **MATH 340-3 Algebra II: Rings and Fields**

The integers and mathematical proof. Relations and modular arithmetic. Rings and fields, polynomial rings, the Euclidean algorithm. The complex numbers and the fundamental theorem of algebra. Construction of finite fields, primitive elements in finite fields, and their application. Prerequisite: MATH 240 (or MATH 232 with a grade of at least B). Students with credit for MATH 322 cannot take MATH 340 for further credit.

### **MATH 341-3 Algebra III: Groups**

Finite groups and subgroups. Cyclic groups and permutation groups. Cosets, normal subgroups and factor groups. Homomorphisms and isomorphisms. Fundamental theorem of finite abelian groups. Sylow theorems. Prerequisite: MATH 340 or 342 or 332. Students with credit for MATH 339 cannot take MATH 341 for further credit.

### **MATH 342-3 Elementary Number Theory**

The prime numbers, unique factorization, congruences and quadratic reciprocity. Topics include the RSA public key cryptosystem and the prime number theorem. Prerequisite: MATH 240 or 232, and one additional 200 level MATH or MACM course. Quantitative.

### **MATH 343-3 Applied Discrete Mathematics**

Structures and algorithms, generating elementary combinatorial objects, counting (integer partitions, set partitions, Catalan families), backtracking algorithms, branch and bound, heuristic search algorithms. Prerequisite: MACM 201 (with a grade of at least B-). Recommended: knowledge of a programming language. Quantitative.

### **MATH 345-3 Introduction to Graph Theory**

Fundamental concepts, trees and distances, matchings and factors, connectivity and paths,

network flows, integral flows. Prerequisite: MACM 201 (with a grade of at least B-). Quantitative.

### **MATH 348-3 Probabilistic Models in Operations Research**

Inventory theory, Markov decision process and applications, queueing theory, forecasting models, decision Analysis and games, probabilistic dynamic programming, simulation modeling, project planning using PERT/CPM, sequencing and scheduling. Prerequisite: STAT 270, MATH 308. Quantitative.

### **MATH 370-3 The Art and Craft of Problem Solving**

Covers the same topics as MATH 370W but without the W component. Prerequisite: MACM 201 with a grade of at least B. At least one of MACM 201, MACM 202, MATH 240, MATH 242, MATH 251 or MATH 252 with a grade of at least A, or permission of instructor. Quantitative.

### **MATH 370W-3 The Art and Craft of Problem Solving**

Designed for students with a strong interest in problem solving and the determination to persevere in seeking solutions to highly challenging mathematical problems. Intended as a preparation for the Putnam Competition, the most challenging and prestigious undergraduate mathematics competition in North America, in which effective presentation of solutions is as important as skill in problem solving. Develops problem solving skills, including confidence, persistence, and willingness to experiment freely as well as to pursue rigorous argument. Reviews strategic principles, tactical approaches, and specific technical tools for problem solving, and mathematical problem solving folklore. Emphasis is placed on clarity of exposition and persuasiveness of written argument, and on development of communication skills. Prerequisite: MACM 201 with a grade of at least B. At least one of MACM 201, MACM 202, MATH 240, MATH 242, MATH 251 or MATH 252 with a grade of at least A, or permission of instructor. Writing/Quantitative.

### **MATH 380W-3 History of Mathematics**

An account of the history of mathematics from ancient times through the development of calculus and the origins of modern algebra in the nineteenth century. Emphasis will be on developments which shaped the mathematics studied in high school and the first two years of university. Prerequisite: MATH 151 (or equivalent) and at least 6 units from MATH at the 200 division or above (includes STAT 270). Intended to be particularly accessible to students who are not specializing in mathematics. Writing/Quantitative.

### **MATH 381W-3 Mathematics Undergraduate Seminar**

A writing and presentation-intensive study of an area of mathematics. Students will read and prepare written and oral comments on material in the mathematics literature. Prerequisite: six units of mathematics at the 200 division or higher. Writing.

### **MATH 398-3 Selected Topics in Mathematics**

Topics in areas of mathematics not covered in the regular undergraduate curriculum of the department. Prerequisites will be specified according to the particular topic or topics offered.

### **MATH 402-4 Industrial Mathematics Project**

Applications of mathematical methods to industrial problems. Emphasis will be placed on the mathematical formulation of problems arising in an industrial context. Topics will be drawn from many areas, including (but not limited to): coding theory, continuum mechanics, optimal control and signal processing. Students will choose problems to work and present their solutions in the form of a written report, poster or oral presentation. Prerequisite: MACM 202, 316; MATH 251, 308, 310; STAT 285. Quantitative.

### **MATH 408-3 Discrete Optimization**

Model building using integer variables, computer solution, relaxations and lower bounds, heuristics and upper bounds, branch and bound algorithms, cutting plane algorithms, valid inequalities and facets, branch and cut algorithms, Lagrangian duality, column generation of algorithms, heuristics algorithms and analysis. Prerequisite: MATH 308 and MACM 201 (with a grade of at least B-).

### **MATH 418-3 Partial Differential Equations**

First-order linear equations, the method of characteristics. The wave equation. Harmonic functions, the maximum principle, Green's functions. The heat equation. Distributions and transforms. Higher dimensional eigenvalue problems. An introduction to nonlinear equations. Burgers' equation and shock waves. Prerequisite: MATH 314 (or PHYS 384) or permission of the department. Recommended: MATH 242 and 320. Quantitative.

### **MATH 419-3 Linear Analysis**

Convergence in Euclidean spaces, Fourier series and their convergence, Legendre polynomials, Hermite and Laguerre polynomials. Prerequisite: MATH 240 (or MATH 232 with a grade of at least B+) and MATH 320. Recommended: MATH 252. Quantitative.

### **MATH 424-3 Complex Analysis**

Conformal mapping, Cauchy Integral Formula, Analytic Continuation, Riemann Mapping Theorem, Argument Principle. Prerequisite: MATH 320 and either MATH 322 or 254, or permission of the instructor. Quantitative.

### **MATH 425-3 Real Analysis**

Metric spaces, normed vector spaces, measure and integration, an introduction to functional analysis. Prerequisite: MATH 320. Quantitative.

### **MATH 436-3 Job Practicum III**

This is the third term of work experience in a co-operative education program available to mathematics students. Units from this course do not count towards the units required for an SFU degree. Prerequisite: MATH 337 and permission of the co-op co-ordinator; students must apply at least one term in advance. This course will be graded on a pass/withdraw basis. A course fee is required.

### **MATH 437-3 Job Practicum IV**

This is the fourth term of work experience in a co-operative education program available to mathematics students. Units from this course do not count towards the units required for an SFU degree. Prerequisite: MATH 436 and permission of the co-op co-ordinator; students must apply at least one term in advance. This course will be graded on a pass/withdraw basis. A course fee is required.

### **MATH 439-3 Algebra IV: Selected Topics in Algebra**

Topics in advanced algebra not covered by other courses. Prerequisite: MATH 338 or 340 or 332, according to the particular topic or topics offered.

### **MATH 440-3 Galois Theory**

An introduction to the theory of fields, with emphasis on Galois theory. Prerequisite: MATH 340 or 332. Quantitative.

### **MATH 443-3 Combinatorial Theory**

Design theory: Steiner triple systems, balanced incomplete block designs, latin squares, finite geometries. Enumeration: generating functions. Burnside's Lemma, Polya counting. Prerequisite: MATH 340 or 332, and MACM 201 (with a grade of at least B-). Quantitative.

### **MATH 445-3 Graph Theory**

Graph coloring, Hamiltonian graphs, planar graphs, random graphs, Ramsey theory, extremal problems, additional topics. Prerequisite: MATH 345. Quantitative.

### **MATH 447-3 Coding Theory**

An introduction to the theory and practice of error-correcting codes. Topics will include finite fields, polynomial rings, linear and non-linear codes, BCH codes, convolutional codes, majority logic decoding, weight distribution of codes, and bounds on the size of codes. Prerequisite: MATH 340 or 332. Quantitative.

### **MATH 448-3 Network Flows**

Applications of network flow models; flow decomposition; polynomial algorithms for shortest paths, maximum flows and minimum costs flows; convex cost flows; generalized flows, multi-commodity flows. Prerequisite: CMPT 225, MATH 308, 345. Quantitative.

### **MATH 461-3 Continuous Mathematical Models**

Formulation, analysis and numerical solution of continuous mathematical models. Applications may be selected from topics in physics, biology, engineering and economics. Prerequisite: MATH 314 and MACM 316. Students with credit for MATH 361 may not take MATH 461 for further credit. Quantitative.

### **MATH 462-3 Fluid Dynamics**

Incompressible fluid flow phenomena: kinematics and equations of motion, viscous flow and boundary layer theory, potential flow, water waves. Aerodynamics. Prerequisite: MATH 314 or PHYS 384, MATH 322. Quantitative.

### **MATH 467-3 Dynamical Systems**

Stability and bifurcation in vector fields and discrete maps. Centre manifold theory and applications of normal forms. Introduction to chaos, Lyapunov exponents, and normal hyperbolicity. Prerequisite: MATH 310. Recommended: MATH 320. Quantitative.

### **MATH 470-3 Variational Calculus**

Procedures of Euler, Lagrange and Hamilton. Extremum problems, stationary values of integrals. Canonical equations of motion, phase space, Lagrangian and Poisson brackets. Prerequisite: MATH 314 or PHYS 384. Recommended: MATH 320. Quantitative.

### **MATH 486-3 Job Practicum V**

This is an optional fifth term of work experience in a co-operative education program available to mathematics and statistics students. Units from this course do not count towards the units required for an SFU degree. Prerequisite: MATH 437 and permission of the co-op co-ordinator. Students must apply at least one term in advance.

### **MATH 491-2 Honors Essay**

Selected topics. Prerequisite: written permission of the department undergraduate studies committee.

### **MATH 492-494-4 Directed Studies**

Independent reading or research in topics selected in consultation with the supervising instructor. Prerequisite: written permission of the department undergraduate studies committee.

### **MATH 495-3 Selected Topics in Applied Mathematics**

The topics included in this course will vary from term to term depending on faculty availability and student interest. Prerequisite: will be specified according to the particular topic or topics offered under this course number.

### **MATH 496-3 Selected Topics in Mathematics**

The topics included in these courses will vary from term to term depending on faculty availability and student interest. Prerequisite: will be specified according to the particular topic or topics offered under these course numbers.

### **MATH 497-3 Directed Studies**

Independent reading or research in topics selected in consultation with the supervising instructor.

Prerequisite: written permission of the department undergraduate studies committee.

#### **MATH 601-4 Discovering Mathematics I**

Arithmetic and Geometry form the core of the elementary school curriculum. The fundamental concepts in both these areas of mathematics will be approached through exploratory exercises and problems as well as in projects. The students will work both singly and in groups to explore the ideas of mathematics. The presentations will be non-theoretical. Prerequisite: acceptance into the master's program in mathematics education or permission of the department. Graduate students in Department of Mathematics cannot take this course to satisfy their degree requirements.

#### **MATH 602-4 Discovering Mathematics II**

Discrete mathematics is used in computer communications, scheduling and transportation problems. Statistics is encountered by each of us every day in the newspapers and on television as medical findings, sporting results and economic strategies are discussed. These are two of the most accessible areas of modern applied mathematics and many problems and the ideas behind their solution can be understood and appreciated by students with only a modest mathematical background. Several topics in these areas and their relationship to real world problems will be explored. The exploration will be done through a series of projects with students often working in teams and making presentations of their discoveries. The presentation will be non-theoretical. Prerequisite: MATH 601 and acceptance into the master's program in mathematics education or permission of the department. Graduate students in Department of Mathematics cannot take this course to satisfy their degree requirements.

#### **MATH 603-4 Foundations of Mathematics**

Crises in mathematics, their historical and philosophical background and their resolution. Prerequisite: acceptance into the MSc program in mathematics education or permission of the department. Graduate students in the Department of Mathematics cannot take this course to satisfy their degree requirements.

#### **MATH 604-4 Geometry**

Euclidean and non-Euclidean geometries. Klein's erlangen program. Prerequisite: entrance into the MSc in mathematics education program or permission of the department. Graduate students in the Department of Mathematics cannot take this course to satisfy their degree requirements.

#### **MATH 605-4 Mathematics in Context**

Mathematical modeling in the largest sense with a focus on topics and issues related to doing and discovering mathematics, including explorations of available computational resources, e.g. Maple. Prerequisite: acceptance into the MSc program in mathematics education and one year of university level calculus. Graduate students in the Department of Mathematics cannot take this course to satisfy their degree requirements.

#### **MATH 701-3 Computer Algebra**

Data-structures and algorithms for mathematical objects, including polynomials, general mathematical formulae, long integer arithmetic, polynomial greatest common divisors, the Risch integration algorithm. Other topics include symbolic differentiation, simplification of formulae, and polynomial factorization. Students will learn Maple for use on assignments. Prerequisite: CMPT 307 or MATH 332. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 708-3 Discrete Optimization**

Held jointly with MATH 408-3. See description for MATH 408-3. Prerequisite: Same as for MATH 408 or

equivalent. Exclusion: MATH 408-3. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 709-3 Numerical Linear Algebra and Optimization**

Held jointly with MACM 409-3. See description for MACM 409-3. Prerequisite: Same as for MACM 409 or equivalent. Exclusion: MACM 409-3. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 716-3 Numerical Analysis II**

The numerical solution of ordinary differential equations and elliptic, hyperbolic and parabolic partial differential equations will be considered. Prerequisite: MATH 310 (or 352) and MACM 316. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 718-3 Partial Differential Equations**

First-order linear equations, the method of characteristics. The wave equation. Harmonic functions, the maximum principle, Green's functions. The heat equation. Distributions and transforms. Higher dimensional eigenvalue problems. An introduction to nonlinear equations. Burgers' equation and shock waves. Prerequisite: MATH 314 (or PHYS 384), or permission of the department. Recommended: MATH 242 and 320. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 719-3 Linear Analysis**

Convergence in Euclidean spaces, Fourier series and their convergence, Legendre polynomials, Hermite and Laguerre polynomials. Prerequisite: MATH 232, 320 or permission of the instructor. Recommended: MATH 252. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 724-3 Applications of Complex Analysis**

Conformal mapping, application to boundary value problems, Schwarz-Christoffel transformation, integral formulas, analytic continuation, argument principle. Prerequisite: MATH 322. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 725-3 Real Analysis**

Metric spaces, normed vector spaces, measure and integration, an introduction to functional analysis. Prerequisite: MATH 320. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 738-3 Linear Algebra**

Linear Algebra. Vector space and matrix theory. Prerequisite: MATH 332 or 339 or permission of the instructor. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 739-3 Algebraic Systems**

Algebraic systems including, for example, groups, rings. Polynomial theory. Prerequisite: MATH 332. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 740-3 Galois Theory**

An introduction to the theory of fields, with emphasis on Galois theory. Prerequisite: MATH 332. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 742-3 Cryptography**

Held jointly with MACM 442-3. See description for MACM 442-3. Prerequisite: Same as for MACM 442 or equivalent. Exclusion: MACM 442-3. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 743-3 Combinatorial Theory**

Design theory: Steiner triple systems, balanced incomplete block designs, latin squares, finite geometries. Enumeration: generating functions. Burnside's Lemma, Polya counting. Prerequisite: MATH 343 and MATH 340 or 332. Recommended: MATH 345 and 440. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 745-3 Graph Theory**

Graph coloring, Hamiltonian graphs, planar graphs, random graphs, Ramsey theory, extremal problems, additional topics. Prerequisite: MATH 345. Recommended: MATH 343. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 747-3 Coding Theory**

An introduction to the theory and practice of error-correcting codes. Topics will include finite fields, polynomial rings, linear and non-linear codes, BCH codes, convolutional codes, majority logic decoding, weight distribution of codes, and bounds on the size of codes. Prerequisite: MATH 232. Recommended: MATH 332. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 748-3 Network Flows**

Held jointly with MATH 448-3. See description for MATH 448-3. Prerequisite: Same as for MATH 448 or equivalent. Exclusion: MATH 448-3. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 761-3 Continuous Mathematical Models**

Formulation, analysis and numerical solution of continuous mathematical models. Applications may be selected from topics in physics, biology, engineering and economics. Prerequisite: MATH 314 and MACM 316. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 762-3 Fluid Dynamics**

Incompressible fluid flow phenomena: kinematics and equations of motion, viscous flow and boundary layer theory, potential flow, water waves. Aerodynamics. Prerequisite: MATH 314 or PHYS 384, MATH 322. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 767-3 Dynamical Systems**

Stability and bifurcation in vector fields and discrete maps. Centre manifold theory and applications of normal forms. Introduction to chaos, Lyapunov exponents, and normal hyperbolicity. Prerequisite: MATH 310. Recommended: MATH 320. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

#### **MATH 770-3 Variational Calculus**

Held jointly with MATH 470-3. See description for MATH 470-3. Prerequisite: Same as for MATH 470 or equivalent. Exclusion: MATH 470-3. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

**MATH 795-3 Selected Topics in Applied Mathematics**

Held jointly with MATH 495-3. See description for MATH 495-3. Prerequisite: Same as for MATH 495 or equivalent. Exclusion: MATH 495-3. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

**MATH 796-3 Selected Topics in Mathematics**

Held jointly with MATH 496-3. See description for MATH 496-3. Prerequisite: Same as for MATH 496 or equivalent. Exclusion: Math 496. Students may not take a 700 division course if it is being offered in conjunction with a 400 division course which they have taken previously.

**MATH 800-4 Mathematics: Selected Topics****MATH 817-4 Groups and Rings**

A survey of graduate group and/or ring theory. Possible topics include generators and relations, composition series, Sylow theory, permutation groups, abelian groups, p-groups, nilpotent and solvable groups, aspects of simple groups, representation theory, group algebras, chain conditions, Jacobson radical, Chevalley-Jacobson density theorem, Wedderburn-Artin theorems.

**MATH 818-4 Algebra and Geometry**

An introduction to algebraic geometry with supporting commutative algebra. Possible topics include Hilbert basis theorem, Hilbert's Nullstellensatz, Groebner bases, ideal decomposition, local rings, dimension, tangent and cotangent spaces, differentials, varieties, morphisms, rational maps, non-singularity, intersections in projective space, cohomology theory, curves, surfaces, homological algebra.

**MATH 819-4 Algebra: Selected Topics****MATH 820-4 Graph Theory**

Algebraic graph theory, extremal graph theory, coloring problems, path and cycle structure of graphs, application of graphs, hypergraphs, and current research topics.

**MATH 821-4 Combinatorics**

An introduction to the theory of incidence structures (finite geometries, block designs) and their relation to linear codes. Algebraic techniques — finite group actions, orbit enumeration, generation of orbit representatives. Exact and asymptotic enumeration of labelled and unlabelled structures.

**MATH 826-4 Posets and Matroids**

An introduction to the theory of posets, geometric lattices and matroids.

**MATH 827-4 Discrete Mathematics: Selected Topics****MATH 831-4 Real Analysis I**

An intensive study of Lebesgue measure, integration and the Lebesgue convergence theorems together with the treatment of such topics as absolute continuity, the fundamental theorem of calculus, the  $L_p$ -spaces, comparison of types of convergence in function spaces, the Baire category theorem.

**MATH 833-4 Analysis: Selected Topics****MATH 836-4 Complex Analysis I**

Topics covered normally will include: Riemann surfaces, complex conjugate co-ordinates; the maximum principle, boundary value problems; conformal mappings, Schwartz-Christoffel formula; the symmetry principle, analytic continuation.

**MATH 841-4 Topology: Selected Topics**

**MATH 842-4 Algebraic Number Theory**  
Review of Galois theory, integrality, rings of integers, traces, norms, discriminants, ideals, Dedekind domains, class groups, unit groups, Minkowski theory, ramification, cyclotomic fields, valuations, completions, applications.

**MATH 843-4 Analytic and Diophantine Number Theory**

Arithmetical functions, distribution of prime numbers, theory of Dirichlet characters, Dirichlet series, theory of Riemann Zeta functions and Dirichlet L-functions, exponential sums, character sums, Diophantine equations, Diophantine approximations, applications.

**MATH 845-4 Number Theory: Selected Topics****MATH 877-1 Supplementary Reading****MATH 878-0 PhD Comprehensive Examination**

A comprehensive written examination covering a broad range of senior undergraduate and graduate material.

**MATH 879-0 PhD Thesis Proposal**

An open oral defence of a written thesis proposal presented to the student's supervisory committee.

**MATH 880-6 MSc Project**

A project leading to research in mathematics completed under the supervision of a faculty member. The project will consist of a written report and a public presentation. This course can only be used for credit towards the MSc project course option.

**MATH 882-0 MSc Final Examination**

A written examination covering senior undergraduate and basic graduate material.

**MATH 890-0 Practicum I**

First term of work experience in a co-operative education program.

**MATH 891-0 Practicum II**

Second term of work experience in a co-operative education program.

**MATH 892-0 Practicum III**

Third term of work experience in the Co-operative Education Program. Prerequisite: MATH 891.

**MATH 893-0 Practicum IV**

Fourth term of work experience in the Co-operative Education Program. Prerequisite: MATH 892.

**MATH 894-2 Reading****MATH 895-4 Reading****MATH 896-2 Introductory Seminar****MATH 897-2 Advanced Seminar****MATH 898-6 MSc Thesis****MATH 899-6 PhD Thesis****Mathematics and Computing****Science MACM****Faculties of Applied Sciences, and Science****MACM 101-3 Discrete Mathematics I**

Introduction to counting, induction, automata theory, formal reasoning, modular arithmetic. Prerequisite: BC high school mathematics 12. Entry into this course is obtained through the School of Computing Science. Quantitative/Breadth-Science.

**MACM 201-3 Discrete Mathematics II**

A continuation of MACM 101. Topics covered include graph theory, trees, inclusion-exclusion, generating functions, recurrence relations, and optimization and matching. Prerequisite: MACM 101. Quantitative.

**MACM 202-4 Mathematical Modeling and Computation**

A variety of continuous and discrete models such as difference equations, differential equations, networks, cellular automata, and fractals are introduced. Students will develop mathematical models for physical phenomena, and use the computer to simulate and analyze the models. A mathematical software package, such as Maple or Matlab, will be extensively used in a laboratory setting. Prerequisite: MATH 152 (or MATH 155 or 158), and CMPT 125 (or CMPT 101 or 104 or 126) and MATH 240 or 232 (co-requisite). Quantitative.

**MACM 300-3 Introduction to Formal Languages and Automata with Applications**

Languages, grammars, automata and their applications to natural and formal language processing. Prerequisite: MACM 201. Quantitative.

**MACM 316-3 Numerical Analysis I**

A presentation of the problems commonly arising in numerical analysis and scientific computing and the basic methods for their solutions. Prerequisite: MATH 152 or 155 or 158, and MATH 232 or 240, and computing experience. Quantitative.

**MACM 401-3 Introduction to Computer Algebra**

A first course in computer algebra — also called symbolic computation. It covers data-structures and algorithms for mathematical objects, including polynomials, general mathematical formulae, long integer arithmetic, polynomial greatest common divisors, the Risch integration algorithm. Other topics include symbolic differentiation, simplification of formulae, and polynomial factorization. Students will learn Maple for use on assignments. Prerequisite: CMPT 307 or MATH 332 or MATH 340. Quantitative.

**MACM 409-3 Numerical Linear Algebra:****Algorithms, Implementation and Applications**

Development of numerical methods for solving linear algebra problems at the heart of many scientific computing problems. Mathematical foundations for the use, implementation and analysis of the algorithms used for solving many optimization problems and differential equations. Prerequisite: MATH 251, MACM 316, programming experience. Quantitative.

**MACM 416-3 Numerical Analysis II**

The numerical solution of ordinary differential equations and elliptic, hyperbolic and parabolic partial differential equations will be considered. Prerequisite: MATH 310 and MACM 316. Quantitative.

**MACM 442-3 Cryptography**

An introduction to the subject of modern cryptography. Classical methods for cryptography and how to break them, the data encryption standard (DES), the advanced encryption standard (AES), the RSA and ElGamal public key cryptosystems, digital signatures, secure hash functions and pseudo-random number generation. Algorithms for computing with long integers including the use of probabilistic algorithms. Prerequisite: (CMPT 201 or 225) and one of (MATH 340 or 332 or 342); or CMPT 405. Cannot be repeated if taken MACM 498 1037-1061. Quantitative.

**MACM 498-3 Special Topics in Mathematics and Computing Science**

Topics will vary from term to term depending on faculty availability and student interest. Prerequisite: will be specified according to the particular topics offered under this course number.

**Molecular Biology and****Biochemistry MBB****Faculty of Science****MBB 151-3 Practicum I**

First term of work experience in the Molecular Biology and Biochemistry Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: acceptance in the Science Co-operative Education Program.

**MBB 201-3 Biochemistry of the Cell**

An introduction to cellular processes with an emphasis on protein structure and function. Topics that will be explored include transcription, translation and protein synthesis, basic metabolic pathways, biomembranes, organelles, vesicle transport, the cytoskeleton and cell signaling. Prerequisite: BISC 101; CHEM 281 as prerequisite or corequisite.

**MBB 222-3 Molecular Biology and Biochemistry**

An introduction to DNA replication and recombination, RNA transcription and protein synthesis in the context of their locations within the cell and their timing in the cell cycle. The relationship between structure and function of proteins and nucleic acids will be addressed. Prerequisite: CHEM 281 with a grade of C- or better. Corequisite or prerequisite: CHEM 282.

**MBB 231-3 Cellular Biology and Biochemistry**

A study of the molecular processes which underlie cell structure and function, integrating ultrastructural, physiological and biochemical approaches. Modern techniques used in the analysis of organelle and cell function are integral parts of the course. Prerequisite: MBB 222, BISC 101 with grades of C- or better. Students may not receive credit for MBB 221 and MBB 231.

**MBB 251-3 Practicum II**

Second term of work experience in the Molecular Biology and Biochemistry Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: acceptance in the Science Co-operative Education Program.

**MBB 300-1 Special Topics in Biotechnology and Business**

A survey of the legal, economic and social aspects of technology transfer in the areas of molecular biology, biochemistry, and biotechnology presented by a series of local experts. Topics will include patents, contracts, intellectual property, capitalization and others. The format will be a formal lecture followed by a workshop. Prerequisite: completion of the second year in the Molecular Biology and Biochemistry and Business Administration joint major or equivalent experience.

**MBB 308-3 Molecular Biology Laboratory**

Modern molecular biological and recombinant DNA methods such as DNA isolation, plasmid preparation, restriction enzyme digestion, Southern blots, cloning and polymerase chain reaction. Prerequisite: MBB 222, and MBB 221 or MBB 231, and MBB 331 as a co- or pre-requisite (the latter is recommended). Students with credit for BISC 357 may not take MBB 308 for further credit.

**MBB 309-4 Biochemistry Laboratory**

Contemporary techniques in biochemistry including protein purification, immunochemical methods, and lipid characterization. Prerequisite: MBB 222, and MBB 221 or MBB 231. Recommended: CHEM 215 and CHEM 286 precede MBB 309.

**MBB 309W-4 Biochemistry Laboratory**

Contemporary techniques in biochemistry including protein purification, immunochemical methods, and lipid characterization. Prerequisite: MBB 222, and MBB 221 or MBB 231. Recommended: CHEM 215 and CHEM 286 precede MBB 309. Writing.

**MBB 310-3 Genes, Biotechnology, and Society**

A Science Breadth course exploring current topics in Biotechnology and Genetic Engineering. Critical issues facing society will be examined from scientific, regulatory, and ethical points of view, with particular emphasis on acquiring enough of the scientific background to discuss and evaluate the issues. Prerequisite: 60 units. This course is not open to majors in MBB or Biological Sciences. Breadth-Science.

**MBB 321-3 Intermediary Metabolism**

Major catabolic and anabolic pathways and their regulation. Particular emphasis is placed on bioenergetics and experimental methods encountered in biochemical research. Prerequisite: MBB 222, and MBB 221 or MBB 231.

**MBB 322-3 Molecular Physiology**

Cellular and biochemical aspects of immunology, muscle contraction, cell motility, neural transmission, the action of hormones. The course will also explore the cellular and molecular bases of cancer. Prerequisite: MBB 222, and MBB 221 or MBB 231.

**MBB 323-3 Introduction to Physical Biochemistry**

Introduction to physical biochemistry including rigorous treatment of thermodynamics and molecular transport and interactions with specific emphasis on biochemical and molecular biological processes. CHEM 360 may be substituted as an alternative to this requirement for MBB majors. Prerequisite: MATH 152 (or 155), PHYS 121 (or 102, or 126, or 141), CHEM 122 (or 102), MBB 222.

**MBB 331-3 Molecular Biology**

The study of DNA and RNA in relation to gene structure and expression: DNA replication and the regulation of gene expression in bacteria and higher organisms. Introduction to recombinant DNA and cloning theory; natural vector structures and recombinant vector construction. Prerequisite: MBB 222, and MBB 221 or MBB 231, BISC 202.

**MBB 351-3 Practicum III**

Third term of work experience in the Molecular Biology and Biochemistry Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: acceptance in the Science Co-operative Education Program.

**MBB 402-3 Molecular and Developmental Genetics**

Selected aspects of developmental biology with an emphasis on genetic and molecular analyses in model systems such as *Drosophila*, *C. elegans* and mice. The focus will be on signal transduction pathways and their regulation of developmental processes. Prerequisite: BISC 333 and MBB 331 (or BISC 331). Students with credit for BISC 402 may not take this course for credit.

**MBB 413-2 Physical Biochemistry Laboratory**

The measurement of physical properties of macromolecules; studies with bio-membranes. Prerequisite: MBB 309 (or 312) and 321 (or BICH 321), and either MBB 323 or CHEM 360. Students with credit for BICH 413 may not take MBB 413 for further credit.

**MBB 420-3 Selected Topics in Contemporary Biochemistry**

The topics in this course will vary from term to term, depending on faculty availability and student interest. Prerequisite: will be announced before the start of the term and will depend upon the nature of the topic offered.

**MBB 421-3 Nucleic Acids**

Recent literature is examined for insights into the structure and properties of DNA and RNA, drawing on a variety of biochemical, chemical and molecular biological perspectives. Prerequisite: MBB 331 (or BISC 331). Students with credit for BICH 421 may not take MBB 421 for further credit.

**MBB 422-3 Biomembranes**

A review of recent research on the structure, dynamics, function and biosynthesis of membranes, membrane lipids and proteins. Prerequisite: MBB 322 (or BICH 321 and 322) and either MBB 323 or CHEM 360. Students with credit for BICH 422 may not take MBB 422 for further credit.

**MBB 423-3 Protein Structure and Function**

Recent research in transition state theory; specificity in enzyme catalyzed reactions, the use of recombinant DNA techniques to describe and modify enzyme catalysis, the function of enzymes in organic solvents, and the development of new catalytic activities through monoclonal antibody techniques.

Prerequisite: MBB 331 (or BISC 331) and either MBB 321 (or BICH 321) or MBB 322 (or BICH 322). Students with credit for BICH 423 may not take MBB 423 for further credit.

**MBB 424-3 Membrane Transport Mechanisms**

Structure and function of molecules that mediate transport across membranes including channels, carriers, and pumps. Primary literature from the fields of biochemistry and physiology will be explored through lectures and independent study. Prerequisite: MBB 321, 322 and either MBB 323 or CHEM 360. Students who have taken MBB 420 under the same topic may not take this course for further credit.

**MBB 426-3 Immune System I: Basis of Innate and Adaptive Immunity**

The basic organization of the immune system, including structure, function and genetics of antibodies, T-cell receptors, innate immune receptors, and the complement system. Innate, antibody and cellular immune responses and their control, and development of the cells involved in these responses. Prerequisite: MBB 331. Students who have taken HSCI 325 or 426 cannot take MBB 426 for further credit.

**MBB 427-3 Immune System II: Immune Responses in Health and Disease**

The immunologic response to bacterial, viral and parasitic infections, immunological diseases, such as autoimmune diseases, immunodeficiency, hypersensitivity reactions (including asthma and allergy) and transplantation-rejection reactions. Immunotherapeutics and vaccine development. Prerequisite: MBB 426 or HSCI 426. MBB 427 is identical to HSCI 427 and students cannot receive credit for both courses.

**MBB 428-3 Molecular Mechanisms of Microbial Pathogenesis**

The molecular strategies that bacterial, viral and fungal pathogens use to colonize the human body and cause disease will be studied. Using specific organisms as illustrations, emphasis will be placed on the structural biology of molecular systems such as acquisition and use of virulence factors, adhesion to and invasion of host cells, secretion of toxins and immune escape. Prions, zoonoses and emerging diseases will be included. Prerequisite: MBB 322. Students who have taken MBB 420 under the same title cannot take this course for further credit.

**MBB 430-3 Mechanisms of Secretory Transport**

Analysis of mechanisms of protein, lipid, and nucleic acid delivery and transport within cells; processes of protein targeting, exocytosis, and endocytosis; molecular mechanisms of vesicle transport and membrane fusion; role in signal transduction and disease. Prerequisite: MBB 322 and BISC 331/MBB 331 or permission of the instructor.

**MBB 431-3 Cells and Disease**

The cellular basis of selected chronic diseases such as cancer and polycystic kidney disease will be explored in-depth. Through the use of lectures and group discussions and an emphasis on the primary literature, the focus will be on recent developments in the study of these diseases. Prerequisite: MBB 322 and 331. Students who have taken MBB 440 under the same title cannot take this course for further credit.

**MBB 432-3 Advanced Molecular Biology Techniques**

Laboratory with accompanying lectures designed to give practical experience in advanced contemporary molecular biology techniques. Lab exercises will include site-directed mutagenesis, preparation and characterization of GST-fusion proteins, construction of transgenes and their expression in transgenic organisms, and use of the yeast two-hybrid assay to



study protein-protein interactions. Prerequisite: MBB 308 and 331, or permission of instructor.

### **MBB 435-3 Genome Biology**

The analysis of entire genomes of organisms has only been possible since 1995. This new area of study will be examined in detail with emphasis on current research. Prerequisite: MBB 331 (or BISC 331). Students with credit for BICH 435 may not take MBB 435 for further credit.

### **MBB 436-3 Gene Expression**

Lectures and student presentations will cover the wide range of ways in which organisms (primarily eukaryotes) regulate gene expression along the pathway from DNA to protein. Prerequisite: MBB 321, 322, and MBB 331 or BISC 331, or permission of instructor.

### **MBB 437-3 Selected Topics in Signal Transduction**

Signal transduction, the conversion of an extracellular signal into a cellular response, is presently one of the most intensively studied aspects of biology. Signaling pathways control a wide range of cellular processes and the characterization of these pathways is having a major impact on cell biology, developmental biology, biotechnology and medicine. In this course, we shall be examining the current literature in this rapidly developing field. We will look at how a combination of biochemistry, cell biology and genetics is being used to investigate the diverse mechanisms used in cell signaling, and examine how the various approaches to studying signal transduction complement each other. Classes will be in the form of lectures and student presentations. Prerequisite: MBB 321, MBB 322 and MBB 331 or BISC 331 or permission of the instructor.

### **MBB 438-3 Human Molecular Genetics**

The course will describe recent advances in human molecular genetics. Topics will include genome analysis, gene therapy, genetic testing, and studies of genetic disorders. Prerequisite: MBB 331 (or BISC 331).

### **MBB 440-3 Selected Topics in Contemporary Molecular Biology**

The topics in this course will vary from term to term, depending on faculty availability and student interest. Prerequisite: will depend upon the nature of the topic offered. Corequisite: will depend upon the nature of the topic offered.

### **MBB 441-3 Bioinformatics**

Lectures and hands-on instruction at the computer in the use of, and theory behind, bioinformatic software and algorithms for the analysis of macromolecular data. Prerequisite: MBB 331 (or BISC 331), and an introductory computer science course (e.g. CMPT 110 or 120), or equivalent.

### **MBB 442-3 Proteomics**

Proteomics concerns the analysis of the entire complement of proteins expressed by an organism. This course will consider protein sequence alignment, sequence database scanning, classification of protein structures, prediction of protein structure and function, and evolution of protein function. Prerequisite: MBB 321 (or BICH 321) and MBB 322 (or BICH 322); one introductory computer course (e.g. CMPT 102 or 120).

### **MBB 443-3 Protein Biogenesis and Degradation**

A consideration of protein biogenesis (folding, assembly, and targeting to cellular compartments), modification, and degradation, and their roles in protein and cellular function. Prerequisite: MBB 321 (or BICH 321) and MBB 322 (or BICH 322); or permission of the instructor.

### **MBB 444-3 Developmental Neurobiology**

Examination of recent literature on neuronal growth cones and axonal guidance. Cell cultural,

biochemical, and molecular genetic approaches will be emphasized in assessing guidance cues.

Prerequisite: BISC 331/MBB 331 and BISC 333, or permission of the instructor.

### **MBB 451-3 Practicum IV**

Fourth term of work experience in the Molecular Biology and Biochemistry Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: acceptance in the Science Co-operative Education Program.

### **MBB 452-3 Practicum V**

Fifth term of work experience in the Molecular Biology and Biochemistry Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: acceptance in the Science Co-operative Education Program.

### **MBB 481-5 Individual Study Semester – Research Design**

Part 1 of 3-part honors degree program, the individual study semester (ISS). The ISS provides students with the opportunity to carry out full time laboratory research in molecular biology and biochemistry. The grade for MBB 481 encompasses the research design aspect of the ISS, consisting of a written proposal and final report. Prerequisite: enrolment in the MBB or Biological Physics Honors Program, a minimum 3.0 CGPA and 3.0 UD GPA and permission of the MBB department. Students may not receive credit for both MBB 481-5 and MBB 493-15. Corequisite: MBB 482-5 and MBB 483-5.

### **MBB 482-5 Individual Study Semester – Research Performance**

Part 2 of a 3-part honors degree program, the individual study semester (ISS). The ISS provides students with the opportunity to carry out full time laboratory research in molecular biology and biochemistry. The grade for MBB 482 encompasses the research performance component of the ISS. Prerequisite: enrolment in the MBB or Biological Physics Honors Program, a minimum 3.0 CGPA and 3.0 UD GPA and permission of the MBB department. Students may not receive credit for both MBB 482-5 and MBB 493-15. Corequisite: MBB 481-5 and MBB 483-5.

### **MBB 483-5 Individual Study Semester – Research Reporting**

Part 3 of a 3-part honors degree program, the individual study semester (ISS). The ISS provides students with the opportunity to carry out full time laboratory research in molecular biology and biochemistry. The grade for MBB 483 encompasses the research reporting component of the ISS. Prerequisite: enrolment in the MBB or Biological Physics Honors Program, a minimum 3.0 CGPA and 3.0 UD GPA and permission of the MBB department. Students may not receive credit for both MBB 483-5 and MBB 493-15. Corequisite: MBB 481-5 and MBB 482-5.

### **MBB 490-2 Directed Study in Advanced Topics Biochemistry**

Directed reading in a topic of molecular biology or biochemistry chosen in consultation with a supervisor. Before seeking approval for enrolment in this course, the student should have already obtained the agreement of a faculty member that he/she is willing to supervise the project, and have prepared a written proposal (of approximately one page) stating the nature of the directed reading topic. The course will include the preparation of a written term paper on the topic chosen. Prerequisite: MBB 222, and MBB 221 or MBB 231 and permission of the molecular biology and biochemistry department. Usually, upper level standing with at least 60 units in a Biochemistry major, minor or honors program will be required.

### **MBB 491-5 Undergraduate Research**

Part time laboratory research in an area of molecular biology or biochemistry for preparation of a thesis in molecular biology and biochemistry. Before seeking approval for enrolment in this course, the student should already have obtained the agreement of a Simon Fraser University faculty member that he/she is willing to supervise the project, and have prepared a written proposal (of approximately 1-2 pages) stating the nature of the research project. The course will include the preparation of a written research report on the results of the project, and may also, at the discretion of the supervisor, include an oral presentation of the results. Prerequisite: MBB 222, and MBB 221 or MBB 231 and permission of the molecular biology and biochemistry department. Usually, upper level standing with at least 60 units in a molecular biology and biochemistry major, minor or honors program will be required.

### **MBB 492-10 Individual Study Semester (Option A)**

Full time laboratory research in an area of molecular biology or biochemistry for preparation of a thesis for the honors degree in molecular biology and biochemistry. This course is available to honors students who have already taken MBB 491 (or BICH 491-5), or who plan to break an individual studies project into two terms (see below). The course will include the preparation of a comprehensive written research report on the results of the project, and may also, at the discretion of the supervisor, include an oral presentation of the results. Prerequisite: permission of the department. Students with credit for BICH 492 may not take MBB 492 for further credit.

### **MBB 496-6 Joint Honors Undergraduate Directed Readings and Research**

Directed reading and part-time scientific research in an area of molecular biology or biochemistry. This course is intended only for those students taking a joint MBB/BUS or MBB/CS honors degree. Before seeking approval for enrolment in this course, the student should already have obtained the agreement of a faculty member that he/she is willing to supervise the project, and have prepared a written proposal (of approximately 1-2 pages) stating the nature of the research readings and project. The course will include preparation of a written report on the results of the project, and may, at the discretion of the supervisor, include an oral presentation of the results. Prerequisite: 75 units and upper division standing in an MBB joint honors program, and MBB 308. Students who take MBB 496 are not allowed to take MBB 491, 492 or 493 with the same faculty supervisor.

### **MBB 505-3 Problem Based Learning in Bioinformatics**

The problem-based learning course will develop students' ability to exchange ideas in small groups focused on real but simplified problems in bioinformatics. Problems will be carefully selected to cover multiple areas of bioinformatics research. This is an advanced bioinformatics course that assumes the student has previous bioinformatics training. Prerequisite: MBB 841 or equivalent bioinformatics course (undergraduate or graduate). This course is identical to CMPT 505 and students can not take both courses for credit.

### **MBB 506-3 Critical Research Analysis**

Advanced seminar series for bioinformatics. Prerequisites: enrolment in Graduate Diploma in Bioinformatics. This course is identical to CMPT 506 and students cannot take both courses for credit.

### **MBB 611-6 Research Rotation I**

One term of original bioinformatics research conducted in the lab of a designated mentor. Students are required to write their results in a scientific journal format and defend these results before a panel



consisting of the project mentor plus two other qualified faculty members. Prerequisite: Enrolment in Graduate Diploma in Bioinformatics. This course is identical to CMPT 611 and students can not receive credit for both courses.

#### **MBB 612-6 Research Rotation II**

One term of original bioinformatics research conducted in the lab of a designated mentor. Students are required to write their results in a scientific journal format and defend these results before a panel consisting of the project mentor plus two other qualified faculty members. Prerequisite: enrolment in Graduate Diploma in Bioinformatics. This course is identical to CMPT 612 and students cannot receive credit for both courses.

#### **MBB 613-6 Research Rotation III**

One term of original bioinformatics research conducted in the lab of a designated mentor. Students are required to write their results in a scientific journal format and defend these results before a panel consisting of the project mentor plus two other qualified faculty members. Prerequisites: Enrolment in Graduate Diploma in Bioinformatics. This course is identical to CMPT 613 and students can not receive credit for both courses.

#### **MBB 659-3 Special Topics in Bioinformatics**

Consideration of recent research literature on contemporary topics in bioinformatics. Prerequisites: MBB 441 or 841; or CMPT 341 or 881.

#### **MBB 669-3 Special Topics in Genomics**

Consideration of recent research literature on contemporary topics in genomics. Prerequisites: MBB 435 or 835.

#### **MBB 679-3 Special Topics in Proteomics**

Consideration of recent research literature on contemporary topics in proteomics. Prerequisites: MBB 442 or 842.

#### **MBB 721-3 Nucleic Acids**

An examination of recent literature about the structure and function of DNA and RNA.

#### **MBB 722-3 Biological Membranes**

A review of recent literature on the structure, dynamics, function and biosynthesis of membrane lipids and proteins.

#### **MBB 723-3 Protein Structure and Function**

Transition state theory; specificity in enzyme catalyzed reactions; use of recombinant DNA techniques to describe and modify enzyme catalysis, catalytic activities through monoclonal antibody techniques.

#### **MBB 724-3 Membrane Transport Mechanisms**

Structure and function of molecules that mediate transport across membranes including channels, carriers, and pumps. Primary literature from the fields of biochemistry and physiology will be explored through lectures and independent study. Prerequisite: MBB 321, 322 and either MBB 323 or CHEM 360 or permission of the instructor.

#### **MBB 726-3 The Immune System I: Basis of Innate and Adaptive Immunity**

The basic organization of the immune system, including structure, function and genetics of antibodies, T-cell receptors, innate immune receptors, and the complement system. Innate, antibody and cellular immune responses and their control, and development of the cells involved in these responses. Prerequisite: MBB 331 or permission of the instructor. Students with credit for MBB or HSCI 426, MBB 826 or HSCI 726 may not complete MBB 726 for credit.

#### **MBB 727-3 Immune System II: Immune Responses in Health and Disease**

The immunologic response to bacterial, viral and parasitic infections, immunological diseases, such as autoimmune diseases, immunodeficiency, hypersensitivity reactions (including asthma and

allergy\_ and transplantation-rejection reactions. Immunotherapeutics and vaccine development. Prerequisite: MBB HSCI 426 or permission of the instructor.

#### **MBB 730-3 Mechanisms of Secretory Transport**

Analysis of mechanisms of protein, lipid, and nucleic acid delivery and transport within cells. The course will examine processes of protein targeting, exocytosis, and endocytosis; molecular mechanisms of COP- and clathrin-mediated vesicle transport; and viral and SNARE-mediated membrane fusion. Lectures will present landmark experiments from classic papers, and student presentations will focus on recent research articles. The significance of these findings with respect to human disease and signal transduction will be considered. Prerequisite: MBB 322 and BISC 331/MBB 331 or permission of the instructor.

#### **MBB 736-3 Gene Expression**

A consideration of the mechanisms and regulation of gene expression in eukaryotes and prokaryotes.

#### **MBB 737-3 Molecular Genetics of Signal Transduction**

Consideration of recent literature dealing with mechanisms of signal transduction. The emphasis of the course varies from term to term. Past offerings have ranged from a specific focus on studying signaling using molecular genetics in model organisms, to an examination of diverse cell biological, biochemical, and genetic approaches being used in current signal transduction research.

#### **MBB 738-3 Human Molecular Genetics**

The course will consider recent advances in human molecular genetics. Topics will include genome analysis, genetic testing, and studies of genetic disorders. Prerequisite: MBB 331 (or BISC 331) or equivalent.

#### **MBB 741-3 Bioinformatics**

An overview of the newly emerging field of bioinformatics, which is loosely defined as the intersection between the fields of molecular biology and computer science. A combination of lecture format and hands-on instruction is provided in the use of, and theory behind, bioinformatic software tools used in genomic and computational biology research. An introduction to the development of bioinformatic software is included, though only basic computer science knowledge is required for this particular course. Prerequisite: one introductory computer programming course (e.g. CMPT 102, 103, 110, 120 or equivalent).

#### **MBB 742-3 Proteomics**

Since the completion of the human genome, the next step is to understand the function of these genes. Proteomics cover the integration of a number of topics with the aim of analyzing the complete complement of proteins expressed by a biological system. This course will give a general understanding of the proteome, describe many of the different aspects of proteomics that have been developed recently, identify the technologic limitations related to proteomics, and will also include likely future directions for the field. Prerequisite: one introductory computer programming course (e.g. CMPT 102, 103, 110, 120 or equivalent).

#### **MBB 743-3 Protein Biogenesis, Function and Degradation**

The central dogma of molecular biology (DNA to RNA to protein) underscores two fundamental biological processes, transcription and translation, that are essential to life. Protein biogenesis (folding, assembly, targeting to the proper cellular compartment), protein modification and protein degradation represent three other equally important cellular activities. The emphasis in this course will be

to review the literature on protein biogenesis, function, and degradation, and explore the new and exciting developments that are just starting to uncover how mechanistically complex these processes are.

#### **MBB 744-3 Developmental Neurobiology**

The course will examine recent literature on neuronal growth cones and axonal guidance. Cell cultural, biochemical, and molecular genetic approaches will be emphasized in assessing the roles and functions of guidance cues. Prerequisite: MBB/BISC 331 and BISC 333 or equivalent and permission of the instructor.

#### **MBB 801-3 Student Seminar in Molecular Biology and Biochemistry I**

Discussion of recent literature through student seminars and written reports. Introduction to professional skills for scientific careers.

#### **MBB 802-3 Student Seminar in Molecular Biology and Biochemistry II**

Discussion of recent literature through student seminars and written reports. Introduction to professional skills for scientific careers. Prerequisite: MBB 801 or an MSc degree.

#### **MBB 806-3 PhD Graduate Research Seminar**

Oral presentation and defence of a written PhD research proposal. Students will be examined on their progress and grasp of knowledge relevant to the proposed research and their capacity to complete the proposed thesis research. Open only to students in the PhD molecular biology and biochemistry graduate program.

#### **MBB 811-1 Techniques in Molecular Biology and Biochemistry**

Consideration of methods applied to research in molecular, cellular, and developmental biology; genetics; and biochemistry. Can be repeated with permission of the instructor.

#### **MBB 812-2 Techniques in Molecular Biology and Biochemistry**

Consideration of methods applied to research in molecular, cellular, and developmental biology; genetics; and biochemistry. Can be repeated with permission of the instructor.

#### **MBB 813-3 Techniques in Molecular Biology and Biochemistry**

Consideration of methods applied to research in molecular, cellular, and developmental biology; genetics; and biochemistry. Can be repeated with permission of the instructor.

#### **MBB 821-823-1 Cell and Molecular Biology Colloquium**

Recent research articles on the molecular mechanisms underlying cellular activities will be presented and discussed by students and faculty, with an emphasis on critical analysis of the concepts and experimental design and methods. Prerequisite: BISC 331/MBB 331 or equivalent. Students who have taken BISC 821, 822 or 823 may not receive credit for this course. A student may not take more than 3 units of Cell and Molecular Biology Colloquium courses, including BISC 821, 822, 823.

#### **MBB 824-3 Physical Biochemistry**

The physical properties of biomacromolecules; modern physical methods applied to biomolecules; properties and analysis of membrane systems.

#### **MBB 825-3 Bioenergetics**

Consideration of important processes for biological energy transduction. Structure/function relationships of membrane components and other interacting macromolecular systems. Cannot be taken for credit in addition to CHEM 825.

#### **MBB 827-3 Mechanisms in Enzyme Catalysis**

The study of enzyme mechanisms by a variety of techniques including spectroscopic, kinetic,

radioisotopic exchange, and site-directed mutagenesis.

#### **MBB 828-3 Spectroscopic Methods in Biochemistry**

Application of spectroscopic methods including multidimensional NMR, fluorescence, circular dichroism, and FTIR for determination of biomacromolecular structure. Includes elements of protein conformation.

#### **MBB 829-3 Special Topics in Biochemistry**

Consideration of recent literature concerning selected contemporary research topics. Can be taken more than once with permission of the instructor.

#### **MBB 831-3 Molecular Evolution of Eukaryote Genomes**

Examination of the dynamics of change in eukaryotic nuclear, mitochondrial, and chloroplast genome structure and organization.

#### **MBB 832-3 Molecular Phylogeny and Evolution**

Examination of the basic methods applicable to analyses of molecular phylogeny and evolution.

#### **MBB 833-3 Developmental Genetics**

Selected topics in the developmental genetics of drosophila.

#### **MBB 834-3 Topics in Developmental Biology**

Selected topics including pattern formation, morphogenetic determinants, inductive interactions, and differential gene expression in embryos.

#### **MBB 835-3 Genome Analysis**

Consideration of topics related to the structure and function of the genome with emphasis on genome mapping and sequencing projects, and computational methods for genomic sequence analysis.

#### **MBB 839-3 Special Topics in Molecular Biology**

Consideration of recent literature concerning selected contemporary research topics. Can be taken more than once with permission of instructor.

#### **MBB 861-1 Biomolecular Structure and Function Colloquium**

Recent research articles on the structure, function, and interactions of macromolecules including proteins, nucleic acids, and lipids, as well as their complexes, will be presented and discussed by students and faculty, with an emphasis on critical analysis of the concepts and experimental design and methods. Prerequisite: BISC 331/MBB 331 or equivalent.

#### **MBB 862-1 Biomolecular Structure and Function Colloquium**

Recent research articles on the structure, function, and interactions of macromolecules including proteins, nucleic acids, and lipids, as well as their complexes, will be presented and discussed by students and faculty, with an emphasis on critical analysis of the concepts and experimental design and methods. Prerequisite: BISC 331/MBB 331 or equivalent.

#### **MBB 863-1 Biomolecular Structure and Function Colloquium**

Recent research articles on the structure, function, and interactions of macromolecules including proteins, nucleic acids, and lipids, as well as their complexes, will be presented and discussed by students and faculty, with an emphasis on critical analysis of the concepts and experimental design and methods. Prerequisite: BISC 331/MBB 331 or equivalent.

#### **MBB 871-1 Directed Readings in Molecular Biology and Biochemistry**

Programs of directed reading and critical discussions offered by faculty or staff members to individual students according to their needs. Study programs

must be approved by the molecular biology and biochemistry graduate studies committee.

#### **MBB 872-2 Directed Readings in Molecular Biology and Biochemistry**

Programs of directed reading and critical discussions offered by faculty or staff members to individual students according to their needs. Study programs must be approved by the molecular biology and biochemistry graduate studies committee.

#### **MBB 873-3 Directed Readings in Molecular Biology and Biochemistry**

Programs of directed reading and critical discussions offered by faculty or staff members to individual students according to their needs. Study programs must be approved by the molecular biology and biochemistry graduate studies committee.

#### **MBB 898-6 MSc Thesis**

#### **MBB 899-6 PhD Thesis**

## **Nuclear Science NUSC Faculty of Science**

#### **NUSC 341-3 Introduction to Radiochemistry**

Brief description of the nucleus and its decays and reactions; interaction of radiation with matter; nuclear instrumentation; radioisotopes in chemistry; activation analysis and related analytical techniques; other applications of nuclear techniques; nuclear reactors and nuclear fusion. Prerequisite: completion of 60 units in a science program, including first year calculus, chemistry and physics. Quantitative.

#### **NUSC 342-3 Introduction to Nuclear Science**

Review of nuclear properties and systematics. Properties of the nuclear force; shell model and structure of complex nuclei, nuclear decay via particle emission and spontaneous fission; experimental description of nuclear reactions; nucleon-nucleus and heavy ion reactions. Prerequisite: NUSC 341 or permission of the department. Recommended: MATH 251 Quantitative.

#### **NUSC 344-3 Nucleosynthesis and Distribution of the Elements**

Formation and distribution of the chemical elements in the early universe, in present stellar environments and in the solar system; elemental abundances and isotopic ratios; and radiometric chronology techniques. Prerequisite: completion of 60 units in a science program, including first year calculus, chemistry and physics. Quantitative.

#### **NUSC 346-2 Radiochemistry Laboratory**

Introduction to the techniques of radiochemistry; proportional and Geiger counters; sample preparations and half-life measurement; synthesis and separation of labelled compounds; beta and gamma-ray spectroscopy. Prerequisite: NUSC 341. Quantitative.

#### **NUSC 444-3 Special Topics in Nuclear Science**

Advanced topics in nuclear science. Prerequisite: NUSC 342 or 442, or permission of the department.

## **Persian PERS Faculty of Arts and Social Sciences Department of Linguistics Language Training Institute**

#### **PERS 118-3 Introduction to Persian I**

An introduction to the Persian alphabet, phonology, morphology, and basic syntax, in relation to reading, writing and translating basic sentences. Students with any prior knowledge or experience in Persian beyond the level of this course may not register in this course. Students who have taken LANG 118-3 with this topic may not take this course for further credit.

#### **PERS 168-3 Introduction to Persian II**

Study of the vocabulary and syntax of standard Persian in preparation for reading, writing, and conversation. Students with any prior knowledge or experience in Persian beyond the level of this course may not enrol in this course. Prerequisite: PERS 118, or permission from the instructor. All students must attend a placement meeting and receive permission of the department. Students who have taken LANG 168-3 with this topic may not take this course for further credit.

## **Philosophy PHIL Faculty of Arts and Social Sciences**

#### **PHIL XX1-3 Critical Thinking**

An introduction to the evaluation of arguments as they are encountered in everyday life. The central aim will be to sharpen skills of reasoning and argumentation by understanding how arguments work and learning to distinguish those which actually prove what they set out to show from those which do not. Open to all students. Quantitative.

#### **PHIL 100W-3 Knowledge and Reality**

An introduction to some of the central problems of philosophy. Topics to be discussed include the different theories of reality; the nature and sources of knowledge, truth, evidence, and reason; the justification of belief and knowledge about the universe. These topics and problems will be considered as they arise in the context of issues such as: relativism versus absolutism; the existence of God; personal identity; the nature of the mind and its relation to the body; free will and determinism; the possibility of moral knowledge. Open to all students. Writing/Breadth-Humanities.

#### **PHIL 110-3 Introduction to Logic and Reasoning**

The aim of this course is to familiarize students with fundamental techniques of correct reasoning. Special attention is given to the methods of logic in particular, and to their role in the discovery of truth not only within science and philosophy but within all forms of rational enquiry. Open to all students. Quantitative.

#### **PHIL 120W-3 Introduction to Moral Philosophy**

An introduction to the central problems of ethics: for example, the nature of right and wrong, the objectivity or subjectivity of moral judgments, the relativity or absolutism of values, the nature of human freedom and responsibility. The course will also consider general moral views such as utilitarianism, theories of rights and specific obligations, and the ethics of virtue. These theories will be applied to particular moral problems such as abortion, punishment, distributive justice, freedom of speech, and racial and sexual equality. Sometimes the course will also focus on important historical figures such as Plato, Aristotle, Kant and Mill. Open to all students. Writing/Breadth-Humanities.

#### **PHIL 144-3 Introduction to the Philosophy of Natural and Social Science**

An introduction to philosophical issues concerning the nature of science. Topics to be discussed include the distinction between science and pseudo-science, the nature of scientific method, the nature of explanation in the natural and social sciences, the phenomenon of scientific change, the relationship between scientific theory and observation, and the objectivity of social science. Students who have completed PHIL 244 may not take this course for further credit. Breadth-Humanities/Science.

#### **PHIL 150-3 History of Philosophy I**

A survey of philosophic thought from late antiquity to the Renaissance. Special attention will be given to the works of Socrates, Plato, Aristotle, Augustine, and

Aquinas. The views of these great thinkers have helped to shape the ways in which we see the world. This course is therefore recommended to everyone with an interest in our intellectual heritage. Open to all students. Breadth-Humanities.

#### **PHIL 151-3 History of Philosophy II**

A survey of philosophic thought from the Renaissance to the 20th Century. Special attention will be given to the works of Descartes, Leibniz, Spinoza, Locke, Berkeley, Hume, Kant, Hegel and Mill. The views of these great thinkers have helped to shape the ways in which we see the world. This course is therefore recommended to everyone with an interest in our intellectual heritage. Open to all students. Breadth-Humanities.

#### **PHIL 201-3 Epistemology**

A critical overview of recent accounts of the nature and scope of human knowledge and of justified or rational belief, and of philosophical issues that these accounts are intended to address. Prerequisite: one of PHIL 100, 150, or 151, or COGS 100. Students who have taken PHIL 301 cannot take this course for further credit.

#### **PHIL 203-3 Metaphysics**

An examination of central problems of metaphysics such as space and time, universals and particulars, substance, identity and individuation and personal identity. Prerequisite: one of PHIL 100, 150, 151, or COGS 100.

#### **PHIL 210-3 Natural Deductive Logic**

This course studies a natural deductive system of propositional and quantificational logic, the first-order theory of identity and the first-order theory of relations. Topics include the metatheory of propositional logic and the application of formal theory to the assessment of natural language arguments. Quantitative.

#### **PHIL 214-3 Axiomatic Logic**

This course studies the metatheory of axiomatic propositional and quantificational logic. Topics include proof theory, the metatheory of propositional logic, the proof theory of first-order logic, first-order models, soundness and completeness. Prerequisite: one of PHIL 210, MACM 101, MATH 144, CMPT 205. Quantitative.

#### **PHIL 220-3 Introduction to Social and Political Philosophy**

An introduction to central problems of political and social philosophy: for example, the basis of political obligation, the proper limits of state power, the appropriate scope of individual liberty, and the nature of social justice. Sometimes the course will focus on the views of historically important political philosophers such as Plato, Aristotle, Hobbes, Locke, Rousseau, Burke, Bentham, Mill and Marx.

#### **PHIL 231-3 Selected Topics**

A specific topic, philosopher or philosophical work to be dealt with as occasion and demand warrant.

#### **PHIL 240-3 Philosophy of Religion**

A critical analysis of classic and contemporary arguments concerning the rationality of belief in God, and related issues.

#### **PHIL 241-3 Philosophy in Literature**

Philosophical themes in the writings of such authors as Voltaire, Turgenev, Dostoevski, Sartre, Camus, Conrad and Golding.

#### **PHIL 242-3 Philosophy of Art**

An examination of issues concerning the nature of works of art. The course will include a consideration of rival theories of art such as: art as expression, art as representation, and art as significant form. Theories of aesthetic criticism will be studied in relation to taste, personal experience, and truth.

#### **PHIL 280-3 Introduction to Existentialism**

A study of existentialist philosophers such as Kierkegaard, Nietzsche, Heidegger, Sartre, and Camus and a survey of precursors such as Kant and Hegel.

#### **PHIL 300-3 Introduction to Philosophy**

An introductory course specifically intended for students in other departments who have at least 60 units. This course is more advanced than 100 and 200 division courses and is of interest to students not only in the humanities, but also in the natural and social sciences. Prerequisite: at least 60 units. Normally, students with credit for PHIL 100 may not take this course for further credit. This course does not count towards the upper division requirements for a student pursuing a minor, major, or honors program in philosophy. Breadth-Humanities.

#### **PHIL 302-3 Topics in Epistemology and Metaphysics**

An exploration of philosophical issues concerning, e.g.: causation, time, modality, or the self; the realism/nominalism or realism/idealism debate; relativism; the concept of truth; naturalized epistemology; global epistemological skepticism or perhaps a 'local' form of skepticism such as skepticism about induction or about sensory belief. Prerequisite: PHIL 201 or 203.

#### **PHIL 314-3 Topics in Logic I**

An examination of one or more topics such as: philosophical logic; deontic logic; the logic of knowledge and belief; the logic of preference; tense logics; foundations of set theory; recursive functions; the history of logic. Recommended: PHIL 210, 214, or an otherwise suitable background.

#### **PHIL 319-3 Applied Health Ethics**

Practical ethical and legal issues in health sciences, emphasizing population and public health. Case studies approach highlighting current ethical dilemmas and decision-making in the context of global to local legal frameworks. Prerequisite: 30 units of completed course work. PHIL 319 is identical to HSCI 319, and students cannot receive credit for both courses. This course cannot be taken for credit as upper division philosophy.

#### **PHIL 319W-3 Applied Health Ethics**

Practical ethical and legal issues in health sciences, emphasizing population and public health. Case studies approach highlighting current ethical dilemmas and decision-making in the context of global to local legal frameworks. Prerequisite: 30 units of completed course work. PHIL 319 is identical to HSCI 319, and students cannot receive credit for both courses. This course cannot be taken for credit as upper division philosophy. Writing.

#### **PHIL 320-3 Social and Political Philosophy**

An examination of an issue or selection of issues in social and political philosophy. Contemporary or historical readings or a mixture of these will be used. Possible topics include: justice, the law and legal systems, sovereignty, power and authority, democracy, liberty and equality. Sometimes the course will focus on the views of historically important political philosophers, such as Plato, Aristotle, Hobbes, Locke, Rousseau, Burke, Bentham, Mill and Marx. Prerequisite: PHIL 120 or 220.

#### **PHIL 321-3 Moral Issues and Theories**

An advanced investigation of central issues and theories in moral philosophy. In any given term, the course may focus on a general theory or concept or concern, for example meta-ethics, utilitarianism, or theories of rights. Sometimes it will focus on a particular problem or problems, such as medical ethics, moral personhood, or free will and moral responsibility. Prerequisite: PHIL 120.

#### **PHIL 322-3 History of Ethics**

An examination of an issue or selection of issues in the history of moral or political philosophy. Historical readings will be the primary focus and may include important figures such as Aristotle, Hobbes, Locke, Hume, and Kant. Prerequisite: One of PHIL 120, 150, 151, 220.

#### **PHIL 331-333-3 Selected Topics**

Prerequisite: as stated by department at time of offering.

#### **PHIL 341-3 Philosophy of Science**

A study of the nature of scientific enquiry, classificatory systems, laws and theories, the role of observation in science, the demarcation between science and non-science, causality, the status of theoretical constructs, and teleological explanation. Prerequisite: PHIL 100; PHIL 210 or 214; and one of PHIL 201 or 203, or COGS 200.

#### **PHIL 343-3 Philosophy of Mind**

A study of theories of the mind, consciousness, and human action. Prerequisite: PHIL 100; and one of PHIL 201 or 203, or COGS 200.

#### **PHIL 344-200 Philosophy of Language I**

An introduction to the major philosophic theories of language. Topics to be considered include the relationship between language and mind, language and the world, language and society. Prerequisite: PHIL 100; and one of PHIL 201 or 203, or COGS 200.

#### **PHIL 350-3 Ancient Philosophy**

Prerequisite: PHIL 100 or 150.

#### **PHIL 352-3 17th Century Philosophy**

An examination of some central issues in 17th century philosophy. Themes may include: changing theories of causation, of the mind, and of the relation between mind and world. Historical readings will be the primary focus and may include important figures such as Descartes, Elisabeth of Bohemia, Malebranche, Spinoza, Leibniz, and Locke. Prerequisite: PHIL 100 or 151. Students who have completed PHIL 353 or PHIL 354 prior to Fall 2006 may not take this course for further credit.

#### **PHIL 356-3 18th Century Philosophy**

An examination of some central issues of 18th century philosophy. Themes may include the development of the theory of ideas and epistemology associated with it. The primary focus may include important figures such as Locke, Berkeley, Hume, and Condillac. Prerequisite: PHIL 100 or 151. Students who have completed PHIL 355 prior to Fall 2006 may not take this course for further credit.

#### **PHIL 357-3 Topics in the History of Philosophy**

Prerequisite: PHIL 100 or 151.

#### **PHIL 421W-4 Ethical Theories**

A highly focussed, advanced examination of a selection of topics in normative or meta-ethics. Prerequisite: one of PHIL 120, 320, or 321. Writing.

#### **PHIL 435-4 Selected Topics**

A specific topic, philosopher or philosophical work to be dealt with as occasion and demand warrant. Prerequisite: two 300 level Philosophy courses.

#### **PHIL 444W-4 Philosophy of Language II**

Advanced topics in recent work in philosophy of language, such as meaning, reference, speech acts, and language and thought. Prerequisite: PHIL 210 or 214. Writing.

#### **PHIL 451W-4 Kant**

Prerequisite: one of PHIL 352, 356, 357. Writing.

#### **PHIL 455W-4 Contemporary Issues in Epistemology and Metaphysics**

Prerequisite: two 300 division PHIL courses. Writing.

#### **PHIL 467W-4 Seminar II**

Prerequisite: two 300 division PHIL courses. Writing.

**PHIL 477-5 Honors Tutorial I**

Prerequisite: PHIL 477 is a requisite for all honors students, and must be taken in one of the last two terms of the student's philosophy program. It must be taken concurrently with or prior to PHIL 478. At least eight weeks prior to the term in which they wish to enrol in PHIL 477, honors students should obtain departmental approval of a proposed syllabus and arrange for faculty supervision of the course. Open only to honors students.

**PHIL 478-5 Honors Tutorial II**

Prerequisite: PHIL 478 is a requisite for all honors students, and must be taken in one of the last two terms of the student's philosophy program. It must be taken concurrently with or consecutively to PHIL 477. At least eight weeks prior to the term in which they wish to enrol in PHIL 478, honors students should obtain departmental approval of a proposed syllabus and arrange for faculty supervision of the course. Open only to honors students.

**PHIL 802-5 Selected Topics in Epistemology****PHIL 803-5 Selected Topics in Metaphysics****PHIL 804-5 Selected Topics in Philosophy of Science****PHIL 805-5 Selected Topics in Philosophy of Mind****PHIL 806-5 Selected Topics in Philosophy of Language****PHIL 812-5 Selected Topics in Logic I****PHIL 813-5 Selected Topics in Logic II****PHIL 814-5 Selected Topics in Philosophy of Mathematics****PHIL 815-5 Selected Topics in Formal Studies****PHIL 822-5 Selected Topics in Normative Ethics****PHIL 823-5 Selected Topics Meta-Ethics****PHIL 824-5 Selected Topics Moral Psychology****PHIL 825-5 Selected Topics in Social and Political Philosophy****PHIL 826-5 Selected Topics in Aesthetics****PHIL 852-5 Selected Topics in Ancient Philosophy****PHIL 853-5 Selected Topics in Medieval Philosophy****PHIL 854-5 Selected Topics in Seventeenth and Eighteenth Century Philosophy****PHIL 855-5 Selected Topics in Nineteenth and Twentieth Century Philosophy****PHIL 861-5 Directed Studies: Selected Topics I****PHIL 862-5 Directed Studies: Selected Topics II****PHIL 864-5 Directed Studies: Selected Topics IV****PHIL 865-5 Directed Studies: Selected Topics V****PHIL 880-5 Pro-Seminar****PHIL 898-6 MA Thesis****PHIL 899-6 Non-Thesis Project Completion****PHIL 998-6 PhD Thesis****Physics PHYS****Faculty of Science****PHYS 100-3 Introduction to Physics**

A course for students with relatively weak backgrounds in physics. Kinematics and dynamics; waves; optics; electricity and magnetism. Prerequisite: BC Principles of Mathematics 12 (or equivalent) or MATH 100 (may be taken concurrently). BC Physics 11 (or equivalent) is recommended. Students who have obtained a grade of C+ or better in BC high school Physics 12 (or its equivalent) or who have taken any further physics course normally may not take PHYS 100 for credit. Tutorials will be held in the open workshop format, i.e. unstructured periods each week when teaching assistants are available to answer questions and help with problem assignments.

**PHYS 101-3 Physics for the Life Sciences I**

Force and motion, conservation of energy and momentum, fluids, properties of soft matter and thermal physics with applications taken from the life sciences. Prerequisite: BC Principles of Physics 12 or PHYS 100 or equivalent. This prerequisite may be waived, at the discretion of the department, as determined by the student's performance on a regularly scheduled PHYS 100 final exam. Please consult the physics advisor for further details. Corequisite: MATH 150 or 151 or 154 or 157; BISC 100 or 101 or 102. Students with credit for PHYS 120, 125 or 140 may not take PHYS 101 for further credit. Tutorials will be held in the open workshop format, i.e. unstructured periods each week when teaching assistants are available to answer questions and help with problem assignments. Quantitative/Breadth-Science.

**PHYS 102-3 Physics for the Life Sciences II**

Waves and optics; electricity and magnetism; modern physics emphasizing radioactivity, with applications taken from the life sciences. Prerequisite: PHYS 101 or 120 or 125 or 140. Students with credit for PHYS 121, 126, or 141 may not take PHYS 102 for further credit. Recommended corequisite: MATH 152 or 155 or 158. Students are encouraged to take PHYS 130 at the same time as PHYS 102. Tutorials will be held in the open workshop format, i.e. unstructured periods each week when teaching assistants are available to answer questions and help with problem assignments. Quantitative/Breadth-Science.

**PHYS 120-3 Mechanics and Modern Physics**

A general calculus-based introduction to mechanics. Topics include translational and rotational motion, momentum, energy, gravitation, and selected topics in modern physics. Prerequisite: BC Principles of Physics 12 or PHYS 100 or equivalent. This prerequisite may be waived, at the discretion of the department, as determined by the student's performance on a regularly scheduled PHYS 100 final exam. Please consult the physics advisor for further details. Corequisite: MATH 150 or 151 or 154 must precede or be taken concurrently. Students with credit for PHYS 101, 125 or 140 may not take PHYS 120 for further credit. Quantitative/Breadth-Science.

**PHYS 121-3 Optics, Electricity and Magnetism**

A general calculus-based introduction to electricity, magnetism and optics. Topics include electricity, magnetism, simple circuits, optics and topics from applied physics. Prerequisite: PHYS 120 or 125 or 140 (or PHYS 101 with a grade of A or B). Students with credit for PHYS 102, 126 or 141 may not take PHYS 121 for further credit. Corequisite: MATH 152 or 155 must precede or be taken concurrently. Quantitative/Breadth-Science.

**PHYS 125-3 Mechanics and Special Relativity**

Newtonian mechanics and special relativity for students with good preparation in physics and mathematics. Topics include Newtonian particle mechanics, angular momentum, torque, conservation laws, gravitation, and special relativity. Prerequisite: greater than 85% in both BC Principles of Mathematics 12 and BC Principles of Physics 12, or a grade of A in PHYS 100, or equivalent. Corequisite: MATH 150 or 151 or 154 must precede or be taken concurrently. Students with credit for PHYS 101, 120 or PHYS 140 may not take PHYS 125 for further credit. Quantitative.

**PHYS 126-3 Electricity, Magnetism and Light**

Electricity, magnetism, and the electromagnetic character of light for students with good preparation in physics and mathematics. Topics include waves, simple electrical circuits, electricity, magnetism, the unifications of electromagnetism in relativity, light as an electromagnetic wave, and photons. Prerequisite: PHYS 125 or a grade of A or better in PHYS 120 or 140. Corequisite: MATH 152 or 155 must precede or

be taken concurrently. Students with credit in PHYS 102, 121 or 141 may not take PHYS 126 for further credit. Quantitative.

**PHYS 130-2 Physics for the Life Sciences Laboratory**

Elementary experiments in optics, electricity, mechanics and heat that are designed to augment the general survey course. Prerequisite: PHYS 102 should be taken concurrently or may precede; or by permission of the department. Students with credit for PHYS 131 or 141 may not take PHYS 130 for further credit. Quantitative.

**PHYS 131-2 Physics Laboratory I**

Elementary experiments in optics, electricity, and mechanics that are designed to augment the general survey courses. Prerequisite: PHYS 121 or 126 should be taken concurrently or may precede; or by permission of the department. Students with credit for PHYS 130 or 141 may not take PHYS 131 for further credit. Quantitative.

**PHYS 140-4 Studio Physics – Mechanics and Modern Physics**

A general calculus-based introduction to mechanics taught in an integrated lecture-laboratory environment. Topics include translational and rotational motion, momentum, energy, gravitation, and selected topics in modern physics. Prerequisite: BC Principles of Physics 12, or equivalent. Corequisite: MATH 150 or 151 or 154 must precede or be taken concurrently. Students with credit for PHYS 125 or 120 or 101 may not take PHYS 140 for further credit. Quantitative/Breadth-Science.

**PHYS 141-4 Studio Physics – Optics, Electricity and Magnetism**

A general calculus-based introduction to electricity, magnetism and optics taught in an integrated lecture-laboratory environment. Topics include electricity, magnetism, simple circuits, optics and topics from applied physics. Prerequisite: PHYS 140. Corequisite: MATH 152 or 155 must precede or be taken concurrently. Students with credit for PHYS 126 or 121 or 102 may not take PHYS 141 for further credit. Quantitative/Breadth-Science.

**PHYS 190-3 Introduction to Astronomy**

A survey of astronomy designed primarily for non-science students, with a strong emphasis on active learning outside the classroom. Covers the development of astronomy from the ancient Greeks through the Renaissance, to the modern view of the cosmos as revealed by the scientific method. Topics include naked-eye observation of the night sky, modern observational equipment and techniques, the solar system, stellar evolution, galaxies, the Hubble expansion, the Big Bang, dark matter, dark energy, and startling new theories of the origin and destiny of the universe. Experiential activities involve active observations of the moon, stars and planets, and introductory experiments in some of the basic physics that astronomers use to explore the cosmos. Students who have received credit for PHYS 130, 131 or 141 may not take PHYS 190 for further credit. Quantitative/Breadth-Science.

**PHYS 192-3 Logarithm and Blues**

An exploration of the production, propagation and perception of sound and music from an interdisciplinary perspective. The viewpoints of a professional musician and a physicist will be presented and compared. Topics include elementary acoustics, instrument characteristics, reproduction technologies, tonal anomalies and perception. Breadth-Science.

**PHYS 211-3 Intermediate Mechanics**

An intermediate mechanics course covering kinematics, dynamics, calculus of variations and Lagrange's equations, non-inertial reference frames, central forces and orbits, and rigid body motion.

Prerequisite: PHYS 126 or 121 or 141. Corequisite: MATH 251; MATH 232 or 240. Recommended: MATH 310 and PHYS 255. Quantitative.

### PHYS 221-3 Electromagnetism

Electrostatics, magnetostatics, capacitance, inductance, concepts of electric and magnetic fields, Maxwell's equations. Prerequisite: PHYS 126 or 121 or 141; MATH 251. Quantitative.

### PHYS 231-3 Physics Laboratory II

Introductory physics laboratory with experiments chosen from mechanics, heat, optics, electricity, magnetism, properties of matter, atomic and nuclear physics, along with lectures on the use of computers for data acquisition and data analysis in the physics laboratory. Prerequisite: PHYS 141 or 131 or 130. Students who have successfully completed PHYS 234 may not receive additional credit for this course. Quantitative.

### PHYS 233-2 Physics Laboratory III

Experiments chosen from among mechanics, heat, optics, electricity, magnetism, properties of matter, atomic and nuclear physics. Engineering Science students will do a selected set of experiments. Prerequisite: PHYS 231 or ENSC 220. Quantitative.

### PHYS 255-3 Vibrations and Waves

The physics of vibrations and waves. Topics include periodic motion, including free and forced oscillations, coupled oscillators, normal modes, and waves in one and higher dimensions. Prerequisite: PHYS 126 or 121 or 141; or PHYS 101 and 102 with a grade of B or better. Corequisite: MATH 251; MATH 232 or 240. Recommended concurrent: PHYS 211 and MATH 310. Quantitative.

### PHYS 285-3 Introduction to Relativity and Quantum Mechanics

Special relativity, including relativistic kinematics and dynamics; tests of relativity; matter waves and early quantum models; wave mechanics and its application to molecular, atomic and subatomic systems. Prerequisite: PHYS 255. Quantitative.

### PHYS 321-3 Intermediate Electricity and Magnetism

Development and application of Maxwell's equations in vector differential form. Notation and theorems of vector calculus; electric charge, fields, potentials, capacitance and field energy; conductors; methods for solving electrostatic problems; electric fields in matter; electrical current and the magnetic field; Ampere's law and the vector potential; magnetic fields in matter; electromotive force, electrical resistance, Faraday's law and inductance; Maxwell's correction to Ampere's law and electromagnetic waves. Prerequisite: PHYS 130 or 131 or 141; MATH 252 or 254; MATH 310. Students with credit for PHYS 221 may not take PHYS 321 for further credit. Quantitative.

### PHYS 326-4 Electronics and Instrumentation

Circuits and circuit theory, passive and active devices, amplifiers, feedback, modern measurement techniques and instrumentation. Prerequisite: PHYS 231 and 255. Quantitative.

### PHYS 332W-4 Optics Laboratory

Experiments in optics and modern physics, including diffraction, interference, spectroscopy, lasers and holography. Engineering Science students will do a selected set of experiments. Prerequisite: PHYS 233 and 285, or equivalent. Writing/Quantitative.

### PHYS 335-3 Practicum I

This is the first term of work experience in a co-operative education program available to students who are studying physics or related areas, such as biophysics, chemical physics or mathematical physics. Units from this course do not count towards the units required for an SFU degree. Prerequisite: completion of 30 units, with a minimum GPA of 2.75 in the physics program. Students should apply to the

department at least one term in advance. A course fee is required. This course is evaluated on a pass/withdrawal basis.

### PHYS 336-3 Practicum II

This is the second term of work experience in a co-operative education program available to students who are studying physics or related areas, such as biophysics, chemical physics or mathematical physics. Units from this course do not count towards the units required for an SFU degree. Prerequisite: PHYS 335 followed by 12 units. A minimum cumulative GPA of 2.75. Students should apply to the department at least one term in advance. A course fee is required. This course is evaluated on a pass/withdrawal basis.

### PHYS 344-3 Thermal Physics

Heat, temperature, heat transfer, kinetic theory, laws of thermodynamics, entropy, heat engines, applications of thermodynamics to special systems, phase transitions. Prerequisite: PHYS 126 or 121, MATH 251. Quantitative.

### PHYS 346-3 Energy and the Environment

The physical principles and limitations of renewable energy source utilization and energy conversion. A quantitative introduction to energy conversion and storage systems, including solar power and heating; wind, tidal, geothermal, hydroelectric and nuclear power, hydrogen technology, electrical and mechanical energy storage. Prerequisite: CHEM 120 or 121; PHYS 102 or 121 or 126 or 141; and MATH 155 or 152. Quantitative.

### PHYS 347-3 Introduction to Biological Physics

A physics perspective on cellular structure and composition; random walks and diffusion; properties of fluids, cell motion; entropy and the properties of soft materials; structure and function of proteins; signal propagation in nerves. Prerequisite: completion of 45 units including BISC 101, CHEM 122, MATH 152 (or 155), PHYS 121 (or 102 or 126 or 141). Quantitative.

### PHYS 365-3 Semiconductor Device Physics

Structure and properties of semiconductors, semiconductor theory, theory and operation of semiconductor devices, semiconductor device technology. Prerequisite: PHYS 321 or 221; PHYS 255 or ENSC 380. PHYS 321, ENSC 380, and PHYS 365 may be taken concurrently. Students with credit for ENSC 224 may not take PHYS 365 for further credit. Recommended: PHYS 285. Quantitative.

### PHYS 380-3 Introduction to Subatomic Physics

Comprehensive overview of nuclear and particle physics with emphasis on concepts: the constituents of matter and the fundamental forces; properties and structure of nuclei and the nucleon; the Standard Model; experimental techniques. Prerequisite: PHYS 285 or CHEM 260 or NUSC 341. Quantitative.

### PHYS 384-3 Methods of Theoretical Physics I

Applications of mathematical methods in physics, differential equations of physics, eigenvalue problems, solutions to wave equations. Prerequisite: MATH 252 or 254; MATH 310; PHYS 255 or ENSC 380. Corequisite: PHYS 211. Quantitative.

### PHYS 385-3 Quantum Mechanics I

Wave mechanics and the Schrodinger equation, the harmonic oscillator, introduction to Dirac notation, angular momentum and spin, the hydrogen atom, atomic structure, time-independent perturbation theory, atomic spectra, and applications. Prerequisite: MATH 252 or 254; PHYS 285 or ENSC 380 or CHEM 260. Corequisite: PHYS 211; MATH 310. Quantitative.

### PHYS 390-3 Introduction to Astrophysics

Characteristics of stars and their evolution, thermodynamics of stellar interior, origin of the elements, galaxies, cosmology, and origin of the

planets. Prerequisite: PHYS 211 and either CHEM 120 or 121. Quantitative.

### PHYS 395-3 Computational Physics

Computer based approaches to the solution of complex physical problems. A partial list of topics includes: Monte-Carlo and molecular dynamics techniques applied to thermal properties of materials; dynamical behavior of conservative and dissipative systems, including chaotic motion; methods for ground state determination and optimization, including Newton-Raphson, simulated annealing, neural nets, and genetic algorithms; the analysis of numerical data; and the use of relevant numerical libraries. Prerequisite: MATH 310, PHYS 211, CMPT 101 or 102. Recommended: PHYS 344 (or PHYS 244) or equivalent. Quantitative.

### PHYS 413-3 Advanced Mechanics

Central forces, rigid body motion, small oscillations. Lagrangian and Hamiltonian formulations of mechanics. Prerequisite: PHYS 384 or permission of the department. Non-physics majors may enter with MATH 252, 310 and PHYS 211. Quantitative.

### PHYS 415-3 Quantum Mechanics II

Foundations of quantum mechanics, time-dependent perturbation theory, radiation, variational methods, scattering theory, advanced topics, and applications. Prerequisite: PHYS 385 and either PHYS 384 or MATH 314 and 419. Quantitative.

### PHYS 421-3 Electromagnetic Waves

A continuation of PHYS 321: properties of electromagnetic waves and their interaction with matter. Transmission lines and waveguides; antennas, radiation and scattering; propagation of electromagnetic waves in free space and in matter; reflection and refraction at boundaries; polarization, interference and diffraction. Prerequisite: PHYS 321 or (PHYS 221 and either MATH 252 or 254); PHYS 255 or ENSC 380. Students with credit for PHYS 324 or 425 may not take PHYS 421 for further credit. Quantitative.

### PHYS 430-4 Digital Electronics and Interfacing

Digital logic design with particular apparatus. Construction and use of interface devices for various laboratory experiments. Prerequisite: PHYS 326 or permission of the instructor. Quantitative.

### PHYS 431-4 Advanced Physics Laboratory I

Advanced experiments in Physics. May include special projects. Prerequisite: PHYS 385 and either PHYS 332 or (PHYS 326 and 465). Quantitative.

### PHYS 432-5 Undergraduate Honors Thesis

Undergraduate research and preparation of an honors thesis. The research project may be in experimental or theoretical physics. Prospective students must obtain agreement of a faculty member willing to supervise the project, and submit the project to the physics department for approval at least two months prior to enrolling for the course. The research must be done during the term in which the student is enrolled for the course, and may not be part of a co-op practicum. The course will be graded on the basis of the honors thesis, which must be submitted before the end of the term. Prerequisite: all students interested in taking this course must consult with their faculty supervisor regarding prerequisites; normally requires PHYS 431.

### PHYS 433-3 Biological Physics Laboratory

Experiments in biological and soft condensed matter physics including investigation of Brownian motion, molecular order and biophysical forces using techniques such as optical trapping, NMR, spectroscopy and x-ray diffraction. Attention will also be given to more general skills, including experimental design, operating and troubleshooting experimental equipment, data analysis, and the presentation of experimental results. Prerequisite: PHYS 231 or MBB 309; PHYS 344 or PHYS 347 or

MBB 323 or CHEM 360, or permission of the department. Quantitative.

### PHYS 435-3 Practicum III

This is the third term of work experience in a co-operative education program available to students who are studying physics or related areas, such as biophysics, chemical physics or mathematical physics. Units from this course do not count towards the units required for an SFU degree. Prerequisite: PHYS 336 and 60 units with a minimum cumulative GPA of 2.75. Students should apply to the department at least one term in advance. A course fee is required. This course is evaluated on a pass/withdrawal basis.

### PHYS 436-3 Practicum IV

This is the fourth term of work experience in a co-operative education program available to students who are studying physics or related areas, such as biophysics, chemical physics or mathematical physics. Units from this course do not count towards the units required for an SFU degree. Prerequisite: PHYS 435 followed by 12 units. A minimum cumulative GPA of 2.75. Students should apply to the department at least one term in advance. A course fee is required. This course is evaluated on a pass/withdrawal basis.

### PHYS 437-3 Practicum V

This is an optional fifth term of work experience in a co-operative education program available to students who are studying physics or related areas such as biophysics, chemical physics or mathematical physics. Units from this course do not count towards the units required for an SFU degree. Prerequisite: PHYS 436 and a minimum cumulative GPA of 2.75. Students should apply to the department at least one term in advance. A course fee is required. This course is evaluated on a pass/withdrawal basis.

### PHYS 445-3 Statistical Physics

Postulates of statistical mechanics, partition functions, applications to gases, paramagnetism and equilibrium. Quantum statistics and applications. Prerequisite: PHYS 344 or CHEM 360. Recommended: PHYS 385. Quantitative.

### PHYS 455-3 Modern Optics

Optical physics, including geometrical and physical optics, waves in anisotropic media, coherence, image formation and Fourier optics, guided wave optics and selected advanced topics such as lasers, nonlinear optics, photonics and quantum optics. Prerequisite: PHYS 321 or 221; PHYS 385 (or equivalent). Quantitative.

### PHYS 465-3 Solid State Physics

Crystal structure, lattice vibrations and thermal properties of solids, free electron model, band theory, and applications. Prerequisite: PHYS 385. Quantitative.

### PHYS 484-3 Nonlinear Physics

Nonlinear mechanics, nonlinear lattice dynamics, competition phenomena, applications in optics and chemistry, forced oscillations, chaos. Prerequisite: PHYS 384 or permission of the department. Quantitative.

### PHYS 485-3 Particle Physics

Physics of elementary particles. Symmetries, strong interactions, electromagnetic interactions, weak interaction. Prerequisite: PHYS 385 or CHEM 464 or permission of the department. Recommended: PHYS 380. Students with credit for NUSC 485 may not take this course for further credit. Quantitative.

**PHYS 490-3 General Relativity and Gravitation**  
Gravity and space-time, Einstein's equations and their solution, tests of relativity, black holes, stellar equilibrium and collapse, and cosmological models. Prerequisite: PHYS 285 or MATH 471; PHYS 384. Quantitative.

### PHYS 492-493-3 Special Topics in Physics

Studies in areas not included within the undergraduate course offerings of the Department of Physics. Prerequisite: permission of the department.

### PHYS 801-2 Student Seminar

Discussion of recent developments in physics, based on student seminars. Attendance is required for all first and second year students proceeding toward MSc or PhD degrees in physics. Course offered regularly.

### PHYS 810-3 Advanced Quantum Mechanics

Advanced non-relativistic and some basic relativistic quantum mechanics: symmetries, Schrodinger/Heisenberg pictures, mixtures, variational and perturbative methods, Dirac equation. Prerequisite: PHYS 415, or equivalent.

### PHYS 811-3 Topics in Quantum Mechanics

A selection of topics which could include: foundations of quantum mechanics, quantum information theory, Bell's inequality, electron in a magnetic field, formal scattering theory, and others of current interest. Prerequisite: PHYS 810 or equivalent.

### PHYS 812-3 Introduction to Quantum Field Theory

A first course in relativistic Quantum Field Theory (QFT), specifically Quantum Electrodynamics (QED). The basic formalism underlying QED is developed, generalizing the canonical quantization procedure of Schrodinger quantum mechanics. Feynman diagrams and rules are derived and applied at leading order to several fundamental processes. An introduction to ultraviolet infinities and the renormalization of QED is given. Renormalization is illustrated by calculations of the anomalous magnetic moment of the electron and the Lamb shift. Prerequisite: PHYS 810 or equivalent.

### PHYS 821-3 Electromagnetic Theory

Advanced topics in classical electromagnetic theory: review of Maxwell's equations, wave propagation, radiation theory, special relativity and electromagnetic theory, magnetohydrodynamics and plasma physics, radiation damping. Course offered regularly. Prerequisite: PHYS 421, or equivalent.

### PHYS 841-3 Statistical Mechanics

Review of ensembles and thermodynamics, ideal gases, imperfect classical gases, classical and modern theories of phase transitions, renormalization group. Course offered regularly. Prerequisite: PHYS 345, or equivalent.

### PHYS 846-3 Nonlinear Physics

Nonlinear dynamics and chaos. Pattern formation and an introduction to turbulence. Prerequisite: PHYS 384 or equivalent.

### PHYS 847-3 Topics in Soft-Condensed Matter and Biological Physics

An introduction to one of several topics in soft-condensed matter and biological physics. Recent versions of this course have focused on polymers, liquid crystals, structures of biological membranes, and cell mechanics. Corequisite: PHYS 841.

### PHYS 861-3 Introduction to Solid State Physics

Free electron theory, crystal structure, band theory, Bloch's theorem, electron dynamics, phonons, semiconductors. Course offered regularly. Prerequisite: PHYS 465 or equivalent, and PHYS 415.

### PHYS 862-3 Solid State Physics II

Special topics in solid state physics such as superconductivity, magnetism, optical properties of solids, electron correlations. Course offered regularly. Prerequisite: PHYS 861.

### PHYS 863-3 Surface Science, Thin Films and Interfaces

Review of surface science techniques: Auger, XPS electron spectroscopies, low energy electron diffraction (LEED), high energy electron diffraction (RHEED), Scanning tunnelling microscopy (STM). Review of thin film deposition techniques: molecular beam epitaxy of metallic and semiconductor multilayer and superlattice structures. Physics and chemistry of surfaces and interfaces. Course offered occasionally. Prerequisite: PHYS 810, 821, 861 or permission of the department.

### PHYS 864-3 Structural Analysis of Materials

The application of transmission electron microscopy (TEM) and x-ray diffraction techniques to the study of the structure of materials. Hands-on instruction about the operation of a TEM and x-ray diffractometers is provided. The basic theory required for analyzing TEM and x-ray images and diffraction data is described. Prerequisite: Permission of instructor.

### PHYS 871-3 Introduction to Elementary Particle Physics

Elementary particle phenomenology; classification of particles, forces, conservation laws, relativistic scattering theory, electromagnetic interactions of leptons and hadrons, weak interactions, gauge theories, strong interactions. Course offered occasionally.

### PHYS 881-3 Special Topics I

### PHYS 882-3 Special Topics II

### PHYS 883-3 Special Topics III

### PHYS 884-2 Special Topics IV

### PHYS 885-2 Special Topics V

### PHYS 886-2 Special Topics VI

### PHYS 887-1 Special Topics VII

### PHYS 888-1 Special Topics VIII

### PHYS 889-1 Special Topics IX

### PHYS 898-6 MSc Thesis

### PHYS 899-6 PhD Thesis

## Political Science POL Faculty of Arts and Social Sciences

### POL 100-3 Introduction to Politics and Government

A comprehensive introduction to the study of politics and government for both political science majors and students specializing in other disciplines. The course will explore the major concepts, methods, approaches and issues in political science, as well as the primary components of government structure and the political process. POL 101W is the Writing certified version of POL 100 and students cannot receive credit for both courses. Breadth-Social Sciences.

### POL 101W-3 Introduction to Politics and Government

A comprehensive introduction to the study of politics and government for both political science majors and students specializing in other disciplines. Explores the major concepts, methods, approaches and issues in political science, as well as the primary components of government structure and the political process. This course is identical to POL 100 and students may not take both courses for credit. Writing/Breadth-Social Sciences.

### POL 151-3 The Administration of Justice

The development of laws and their application to the citizen and social groups. Special consideration will be given to civil liberties. Breadth-Social Sciences.

### POL 201-3 Research Methods in Political Science

An introduction to quantitative research techniques in political science. Prerequisite: POL 100 or 101W or 151 or permission of department. Students with credit

for IS 240, POL 213 or SA 255 may not take POL 201 for further credit. Quantitative.

### **POL 202-3 Research Design**

Approaches to political science research design methods. Covers causality, conceptualization and analysis; literature reviews; and the logic behind different choices of methodology. Prerequisite: POL 100 or 101W.

### **POL 210-3 Introduction to Political Philosophy**

An examination of concepts presented by the major political thinkers of the western world. The course surveys those ideas which remain at the root of our political institutions, practices and ideals against a background of the periods in which they were expressed. Prerequisite: POL 100 or 101W or permission of department. Breadth-Social Sciences.

### **POL 211-3 Politics and Ethics**

An examination of selected contemporary political controversies that raise fundamental ethical issues. Discussion will be informed by contending perspectives in modern political philosophy. Prerequisite: POL 100 or 101W or permission of department. Breadth-Social Sciences.

### **POL 221-3 Introduction to Canadian Government**

An introduction to the institutional order and political structure of the Canadian state. The course will include topics such as the constitution, parliament, cabinet, judiciary, public service and federal-provincial relations. Prerequisite: POL 100 or 101W or 151 or permission of department.

### **POL 222-3 Introduction to Canadian Politics**

An introduction to the social and participatory basis of Canadian politics, covering topics such as political culture, regionalism and other political divisions, political parties, elections, interest groups and new social movements. Prerequisite: POL 100 or 101W or 151 or permission of department.

### **POL 223-3 Canadian Political Economy**

An introductory study of Canada's political economy, stressing the interrelated nature of Canada's economic and political life. The course focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism. This course is identical to CNS 280 and students cannot take both courses for credit. Recommended: POL 100 or 101W. Breadth-Social Sciences.

### **POL 231-3 Comparative Politics**

An introduction to political processes and structures in comparative perspective. Prerequisite: POL 100 or 101W or permission of department. Breadth-Social Sciences.

### **POL 232-3 US Politics**

An examination of the American political system, including the presidency, the congress, the courts, the bureaucracy and the party system. Prerequisite: POL 100 or 101W or permission of the department. Students who have credit for POL 332 may not take POL 232 for further credit.

### **POL 241-3 Introduction to International Politics**

Theory and practice of international politics, diplomacy, hot war, cold war, alliances and the role of leaders. Prerequisite: POL 100 or 101W or permission of department. Breadth-Social Sciences.

### **POL 251-3 Introduction to Canadian Public Administration**

An introduction to the basic elements of public administration in the government of Canada,

including the organization of the public service, planning and financial administration, personnel administration, collective bargaining and administrative regulation. Prerequisite: POL 100 or 101W or 151 or permission of department.

### **POL 252-3 Local Democracy and Governance**

The political process in the urban municipality from a comparative perspective. Prerequisite: POL 100 or 101W or 151 or permission of department. Breadth-Social Sciences.

### **POL 253-3 Introduction to the Public Policy Process**

Explores the political dimensions of public policy making in Canada. Reviews theories and techniques in policy analysis, and focuses on the contemporary dynamics of public policy in various economic and social sectors from the point of view of political ideas, interests, institutions, and decision-making. Prerequisite: POL 100 or POL 101W or permission of the department. Students who have taken POL 351 may not take this course for further credit.

### **POL 290-3 Political Science Practicum I**

First term of work experience in the Political Science Co-operative Education program. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the preceding term. Units from this course do not count towards the units required for an SFU degree. Prerequisite: 30 units with a CGPA of 3.0. Transfer students must complete at least 15 units at Simon Fraser University.

### **POL 291-3 Political Science Practicum II**

Second term of work experience in the Political Science Co-operative Education Program. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the preceding term. Units from this course do not count towards the units required for an SFU degree. Prerequisite: POL 290; 45 units with a CGPA of 3.0.

### **POL 300-4 Selected Topics: Comparative Politics**

### **POL 301-3 Political Science Practicum III**

Third term of work experience in the Political Science Co-operative Education program. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the preceding term. Units from this course do not count towards the units required for an SFU degree. Prerequisite: POL 291, 60 units, and a minimum CGPA of 3.0.

### **POL 312-4 Modern Political Thought**

A discussion of selected political philosophers in the western tradition from Hobbes to Rawls. Prerequisite: POL 210 or equivalent, or permission of the department.

### **POL 313-4 Political Ideologies**

Discussion of the major political ideologies in western political systems: liberalism, conservatism, the new right, socialism and social democracy, feminism and environmentalism. Emphasis is placed on their conceptual foundations and contemporary expressions. Prerequisite: POL 210 or 312 or permission of the department.

### **POL 314-4 Theory and Explanation in Political Science**

A discussion of issues in the philosophy of the social sciences which are relevant to the study of politics and a critical evaluation of contemporary approaches to political inquiry, including empirical theory, rational choice theory and hermeneutics. Prerequisite: six lower division units in political science or permission of the department. Quantitative.

### **POL 315-4 Quantitative Methods in Political Science**

An examination of the principal methods of empirical research in political science. This course is equivalent to SA 355. Prerequisite: POL 201, or SA 255 or STAT 203 (formerly 103). Students who have completed POL 315 may not take SA 355 for further credit. Quantitative.

### **POL 319-4 Selected Topics in Political Theory**

Prerequisite: six lower division units in political science or permission of the department.

### **POL 321-4 The Canadian Federal System**

Development of the federal system including topics such as the division of powers, parties, federal-provincial relations and theories of federalism. Prerequisite: six lower division units in political science or permission of the department.

### **POL 322-4 Canadian Political Parties**

Development of the Canadian party system. Party ideologies, organization, campaigns and elections. Prerequisite: six lower division units in political science or permission of the department.

### **POL 323-4 Provincial Government and Politics**

An examination of the historical development of the provinces and the role they have played in Confederation. The course surveys the evolution of provincial economies, societies and governments in order to understand the contemporary issues and problems faced by Canada's provincial states. Prerequisite: six lower division units in political science or permission of the department.

### **POL 324-4 The Canadian Constitution**

An analysis of the Canadian constitution from a theoretical and comparative perspective. Amendment, entrenchment, civil rights. Prerequisite: six lower division units in political science or permission of the department.

### **POL 327-4 Globalization and the Canadian State**

In an era of globalization, what scope remains for national politics? Does globalization lead to a deficit of democracy? This course examines the challenge that globalization poses for the Canadian political system. Emphasis is placed on globalization's impact on the organization, activities and role of Canadian State. Prerequisite: six lower division units in political science or permission of the department.

### **POL 329-4 Selected Topics in Canadian Government and Politics**

Prerequisite: six lower division units in political science or permission of the department.

### **POL 331-4 Campaigns and Elections in the United States**

Introduces the American electoral system. Prerequisite: POL 231 or 232.

### **POL 335-4 Government and Politics: People's Republic of China**

An examination of the political development of China in modern times with special emphasis on political culture and its relationship to political institutions, political processes and political behavior. Prerequisite: six lower division units in political science or permission of the department.

### **POL 339-4 Selected Topics in Comparative Government and Politics**

Prerequisite: six lower division units in political science or permission of the department.

### **POL 341-4 International Integration and Regional Association**

Theories of integration, and the empirical analysis of selected regional associations, historical and contemporary. Imperialism, federation, association. Prerequisite: six lower division units in political science or permission of the department.



**POL 342-4 Developing Countries in Global Politics**

Problems arising from the disparities in power and wealth between the highly industrialized countries of Europe and North America, and the under-industrialized countries of Asia, Africa and Latin America. Prerequisite: six lower division units in political science or permission of the department.

**POL 343-4 Global Political Economy**

An introduction to the study of the international political economy, with an emphasis on the interaction between the state and markets, and the basic political-institutional relationships of trade, money and finance, international investment, foreign debt and foreign aid. Prerequisite: six lower division units in political science or permission of the department.

**POL 344-4 International Law**

Sovereignty, nationality, jurisdiction, arbitration. Examination of selected cases exemplifying present trends in the international legal order. Prerequisite: six lower division units in political science or permission of the department.

**POL 345-4 The Nation-State and Multinational Corporation**

A study of relations between multinational enterprise and national interests in developed and developing countries. Prerequisite: six lower division units in political science or permission of the department.

**POL 346-4 International Organization**

An examination of the structures and processes and the main substantive decisions of the United Nations and related international organizations. Based upon in-depth study of the UN Charter, the Security Council, General Assembly, Secretary-general and Secretariat and their constitutional and political interactions since 1945, with special attention to the theory and practice of international organization advanced by the principal Western countries, the Soviet Union and Soviet bloc, the People's Republic of China and leading Third World countries. Prerequisite: six lower division units in political science or permission of the department.

**POL 347-4 Canadian Foreign Policy**

An overview of Canadian foreign policy post World War II. Various perspectives are discussed including realism, economic nationalism, liberal internationalism and political economy/dependency analysis. A variety of analytical perspectives are used to examine issue-areas such as foreign trade including the role of NAFTA, defence policy and alliance relations, foreign investment, foreign aid, immigration policy, energy policy and the role of domestic political factors in foreign policy decision-making. Prerequisite: six lower division units in political science or permission of the department.

**POL 348-4 Theories of War, Peace and Conflict Resolution**

Examines the origins and causes of several major conflicts during the last century. This course reviews various theories on the causes of conflict and war in the international system. It also examines the techniques of preventive diplomacy, peacekeeping, crisis management and coercive diplomacy as they have been used to try to forestall open warfare and maximize the opportunities for peaceful change and the negotiated resolution of international disputes. Both documentary and feature films will be used to illustrate many types of conflict and warfare in the international system. Course simulations, when employed, will concentrate on the problems and risks that are involved in international efforts to contain and reverse the proliferation of weapons of mass destruction. Prerequisite: six lower division units in political science or permission of the department.

**POL 349-4 Selected Topics in International Relations**

Prerequisite: six lower division units in political science or permission of the department.

**POL 353-4 Public Sector Management**

A detailed analysis of administrative planning in the public sector, particularly as it relates to the Canadian government. The significance of financial management and personnel management to the overall planning will be emphasized. Prerequisite: six lower division units in political science or permission of the department.

**POL 354-4 Comparative Metropolitan Governance**

A comparative analysis of regional metropolitan governance in Canada and selected other jurisdictions (such as the USA, UK, etc.). The course involves an examination of major policy dilemmas in urban development, and of the local, regional and senior intergovernmental relations within which much of the public policy making in metropolitan settings takes place. Prerequisite: six lower division units in political science or permission of the department.

**POL 356-4 The Political Economy of Labour**

Examines the ways in which economic and political forces are constantly changing the nature of work. The focus will be on both paid and unpaid labor; the problems of inequality; and the ways in which workers have organized to protect their interests. The course material will deal mainly, although not exclusively, with the political economy of labor in contemporary Canada. Prerequisite: six lower division units in political science or permission of the department.

**POL 357-4 Selected Topics in Urban and Local Government**

Prerequisite: six lower division units in political science or permission of the department.

**POL 358-4 Selected Topics in Public Policy**

Prerequisite: six lower division units in political science or permission of the department.

**POL 359-4 Selected Topics in Governance**

Prerequisite: six lower division units in political science or permission of the department.

**POL 360-4 Ethics and Governance**

Examines leadership, ethics and democracy and their implications for government and public administration. Discusses the need for ethical behaviour by professional and public servants and the means and mechanisms by which this can be achieved. Prerequisite: six lower division units in political science or permission of the department.

**POL 361-4 Policy Communities and Policy Networks**

Surveys approaches to understanding origins of influence in public policy making. Focuses on key actors involved in public policy making including interest groups, political parties, political leaders, civil servants, the media, experts and the public, and examines their interactions in policy communities and policy networks. Prerequisite: six lower division units in political science or permission of the department.

**POL 362-4 Comparative Public Policy**

A comparison of major trends in public policy across national and sectoral boundaries. Examples from selected policy areas and issues are examined in order to assess the effects of globalization, regional integration and other factors on policy convergence and divergence. Prerequisite: six lower division units in political science or permission of the department.

**POL 373-4 Human Security**

Explores what is involved in shifting the focus in the security realm from 'national interest' to the safety and needs of humans. Addresses several contemporary issues of human insecurity such as genocide, terrorism, civil wars and other complex

emergencies; the political economy of conflict (small arms, "blood" diamonds); 'new' inequalities (economic, gender, class, ethnicity); and new health risks (e.g. HIV/AIDS, SARS, ecological degradation). Considers recent initiatives and trends that have emerged to deal with these issues (e.g. humanitarian intervention, International Criminal Court, new coalitions of state and non-state actors such as the Ottawa Process on anti-personnel mines). Prerequisite: six lower division units in Political Science or permission of the department. Students who have taken POL 349 'Special Topics' for credit under this title may not take this course for further credit.

**POL 374-4 Africa in the Global Political Economy**

Considers Africa in the historical development of the modern global political economy, from the transatlantic slave trade to the present. Examines contemporary issues associated with Africa in the neo-liberal world order and the politics of resistance and alternative pathways or models of development. Prerequisite: six lower division units in political science or permission of the department.

**POL 381-4 Japanese Politics**

The political system of Japan, including an analysis of political culture, political institutions, political behavior and both formal and informal political processes. Emphasis will be placed on the pre-World War II political development of Japan. Prerequisite: six lower division units in political science or permission of the department.

**POL 401-3 Political Science Practicum IV**

Fourth term of work experience in the Political Science Co-operative Education Program. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the preceding term. Units from this course do not count towards the units required for an SFU degree. Prerequisite: POL 301, 75 units, and a minimum CGPA of 3.0.

**POL 411-4 Normative Political Theory**

Advanced seminar examining selected themes, debates and texts in recent normative political philosophy, with an emphasis on contemporary democratic theory. Prerequisite: POL 210 or 312 or 313; or permission of the department.

**POL 415-4 The Liberal Tradition**

A critical examination of the development of liberalism from classical liberalism (e.g. John Locke) to contemporary conflict between revisionist and neo-classical or libertarian currents. Prerequisite: eight upper division units in political science or permission of the department.

**POL 416-4 Feminist Social and Political Thought**

This course will examine the works of major feminist thinkers and the problems of developing feminist theory. Prerequisite: eight upper division units in political science or permission of the department.

**POL 417-4 Human Rights Theories**

This course introduces students to the problems involved in the assertion of universal moral standards across political and cultural divides. These issues will be explored at a theoretical level, and in the context of specific human rights controversies. Prerequisite: eight upper division units in political science or permission of the department. Recommended: PHIL 220 or 320.

**POL 418-4 Selected Topics in Political Theory**

Prerequisite: eight upper division units in political science or permission of the department.

**POL 419-4 Selected Topics in Political Theory II**

Prerequisite: eight upper division units in political science or permission of the department.



**POL 422-4 Canadian International Security Relations**

The course traces the evolution of Canadian thinking on national international security issues through an examination of pre-World War II isolationism, elite attitudes during the Cold War, the formative period of NATO, as well as Canadian involvement in the Korean and Indochina conflicts. More recent policies concerning ALCM testings, NORAD, and nuclear non-proliferation will also be explored in detail. Prerequisite: eight upper division units in political science or permission of the department.

**POL 423-4 BC Government and Politics**

The legislature, political parties, pressure groups, relations with other governments, and other aspects of the policy process. Prerequisite: eight upper division units in political science or permission of the department.

**POL 424-4 Quebec Government and Politics**

An examination of the political culture and institutions in the province of Quebec with particular emphasis on the period since 1960. Prerequisite: eight upper division units in political science or permission of the department.

**POL 426-4 Canadian Political Behavior**

The study of political attitudes and behavior in Canada. Topics will include political culture, public opinion, elections and voting behavior. Prerequisite: eight upper division units in political science or permission of the department. Quantitative.

**POL 426W-4 Canadian Political Behavior**

The study of political attitudes and behavior in Canada. Topics will include political culture, public opinion, elections and voting behavior. Prerequisite: eight upper division units in political science or permission of the department. Writing/Quantitative.

**POL 428-4 Selected Topics in Canadian Government and Politics I**

Prerequisite: eight upper division units in political science or permission of the department.

**POL 429-4 Selected Topics in Canadian Government and Politics II**

Prerequisite: eight upper division units in political science or permission of the department.

**POL 431-4 Comparative Western European Systems**

An advanced examination of the political life of Western European democratic systems, with special attention to issues of comparative and theoretical import, such as the causes and consequences of various types of party systems and the determinants of democratic stability. Prerequisite: eight upper division units in political science or permission of the department.

**POL 432-4 Comparative Communist and Post-Communist Political Systems**

A comparative examination of the emergence and development of communist political systems and also the impact of that experience on the various post-communist successor states undergoing the process of regime transition in Eurasia and eastern Europe. The course will focus on theoretical issues pertaining to the topics considered, and case studies of specific countries. Prerequisite: eight upper division units in political science or permission of the department.

**POL 433-4 Comparative Development**

A comparison of theories and models of development, exploring issues of economic growth and decline, governance, social cohesion and cleavages in selected countries and regions of the world. Prerequisite: eight upper division units in political science or permission of the department.

**POL 435-4 Comparative Federal Systems**

Comparative analysis of federations such as the Canadian, American, West German, Yugoslavian, Soviet, Indian and Swiss. Prerequisite: eight upper division units in political science or permission of the department.

**POL 436-4 Elections, Parties and Governments in Comparative Perspectives**

An examination of the processes by which governments are created, maintained, and destroyed in democratic systems. The effects of different regime types, electoral arrangements, and party systems will be highlighted. Prerequisite: eight upper division units in political science or permission of the department.

**POL 437-4 Governance and Globalization**

Explores the ways in which globalization is affecting processes of governance. By focusing on specific issue areas such as economics, security, human rights, basic need (health and environment), it considers alterations in the role and form of states as well as changes in relations among state, business and civil society sectors. Explores changes at the national level, but also examines the growing relevance of interactivity between the national and other levels of governance from local through international, regional and global, the enhanced role of non-state actors in formal governance procedures, and processes of "governance without government". Prerequisite: 8 upper division units in Political Science or permission of the department. Students who have taken POL 438 or 439 for credit under this title may not take this course for further credit.

**POL 438-4 Selected Topics in Comparative Government and Politics I**

Prerequisite: eight upper division units in political science or permission of the department.

**POL 439-4 Selected Topics in Comparative Government and Politics II**

Prerequisite: eight upper division units in political science or permission of the department.

**POL 440-4 Special Topics: Latin American International Relations**

A multidisciplinary study of bilateral issues between Latin America and a specific country or region, e.g. US and Latin America, the Pacific Rim. Historical, economic, and ideological perspectives as well as topics related to business, foreign aid, and immigration will be emphasized. Prerequisite: eight upper division units in political science or LAS 200 or permission of department. This course (POL 440) is identical to POL 340, LAS 311, 411 and 440, and students cannot take more than one of these courses for credit.

**POL 441-4 Comparative Foreign Relations: Selected Political Systems**

A comparison of the foreign policies of selected political systems. Subjects treated include the domestic and foreign determinants of foreign policy decisions, the mobilization and application of resources to influence international politics, and the consequences of foreign policy decisions and strategies. Prerequisite: eight upper division units in political science or permission of the department.

**POL 442-4 The Political Economy of International Trade**

Focuses on the political economy of international trade relations. Subjects of interest may include the evolution of the global trade regime from the GATT to the WTO, regional trade groupings such as the European union and NAFTA, the special trade problems of less developed countries and transition economies, and the growing role of civil society in international trade. Prerequisite: eight upper division units in political science or permission of the department.

**POL 443-4 Nuclear Strategy, Arms Control, and International Security**

Provides an overview of the evolution of US and Soviet strategic policies since World War II. The political and doctrinal bases of national strategic debates are closely examined, as are the various obstacles to a more stable international arms control regime for nuclear weapons. Prerequisite: eight upper division units in political science or permission of the department.

**POL 444-4 Politics and Foreign Policy of the European Union**

This course offers a comparative foreign policy analysis of EEC members, as well as an introduction to European political co-operation. Focuses on institutions of the EEC, including the Commission, Council of Ministers, European Council and European Parliament. Provides an analysis of both internal EC issues such as Common Agricultural Policy and European Monetary Union and external issues such as trade and security relations. Prerequisite: eight upper division units in political science or permission of the department.

**POL 445-4 American Foreign Policy**

Examines US foreign policy in the post World War II era. Topics to be covered will include the formation of foreign policy, 20th century American security issues, alliance relations, crisis management and international economic relations. Prerequisite: eight upper division units in political science or permission of the department.

**POL 446-4 International Relations in East Asia**

An overview and analysis of international relations in East Asia. Prerequisite: eight upper division units in political science or permission of the department.

**POL 447-4 Theories of Global Political Economy**

An examination of the major theories of international political economy, and their application to such issues as the politics of trade, aid, monetary relations, and transnational corporations. Prerequisite: eight upper division units in political science or permission of the department.

**POL 448-4 Selected Topics in International Relations**

Prerequisite: eight upper division units in political science or permission of the department.

**POL 449-4 Selected Topics in International Relations II**

Prerequisite: eight upper division units in political science or permission of the department.

**POL 451-4 Public Policy Analysis**

Examines the conceptual, philosophical and practical aspects of public policy analysis as it is conducted in government, universities, interest groups and policy research institutes. Specific attention is paid to the question of the role of policy research in the process of public policy making and the design of government programs and services. Prerequisite: eight upper division units in political science or permission of the department.

**POL 453-4 The Political Economy of Cities and City Regions**

Analyses the political economy of cities and city-regions and discusses the roles of cities/urban-regions in local, regional, national and global political economies. Provides an assessment of globalist vs. globalized cities and theories around such phenomena. Explores new strategies for city and city-regional responses to globalization. Prerequisite: eight upper division units in political science or permission of the department. Students are encouraged to have completed at least one other course in Urban politics/governance or with the Urban Studies certificate program.

**POL 454-4 Urban Public Policy Making**

This course will link differing theoretical perspectives and concepts currently used in public policy studies to an understanding of public policy making in urban governance. Prerequisite: eight upper division units in political science or permission of the department.

**POL 455-4 States and Markets**

Survey of the concepts and theoretical approaches, from Adam Smith's political economy to contemporary paradigms, used to understand the role and place of state institutions in a market economy and of the criteria that are used to design and implement economic and social policies. Particular attention is paid to the philosophical and normative questions that are raised by such an analysis. Prerequisite: eight upper division units in political science or permission of the department.

**POL 456-4 Governing Instruments**

Examines and compares the various means at the disposal of government for implementing policy options, including regulation, the creation or privatization of public enterprises, the delivery or contracting out of services, taxation and tax expenditures, and any other administrative or legislative processes that governments in Canada and/or in similar countries have used to manage the economy or effect social change. Prerequisite: eight upper division units in political science or permission of the department. Students who have completed POL 355 prior to September 2008 may not take this course for credit.

**POL 457-4 Controversies in Policy Innovation and Design**

This course is intended to offer students an opportunity to reflect upon the challenges posed by the development of new technologies, the emergence of new movements and the uncertainties attendant to social and political conflicts associated with policy issues about which experts differ in significant ways. Prerequisite: eight upper division units in political science or permission of the department.

**POL 458-4 Selected Topics in Local and Urban Governance**

Prerequisite: eight upper division units in political science or permission of the department.

**POL 459-4 Selected Topics in Governance**

Prerequisite: eight upper division units in political science or permission of the department.

**POL 460-4 Selected Topics in Public Policy**

Prerequisite: eight upper division units in political science or permission of the department.

**POL 461-4 The Risk Society and Risk Management**

Studies risk and calculations of acceptable risks by policy-makers due to factors such as rapid technological, demographic, climate, and other kinds of change. Explores sources of risk, and the behavior, conduct, and decisions of public and non-governmental actors involved in creating and implementing policy. Prerequisite: eight upper division units in political science or permission of the department.

**POL 462-4 Non-Profit and Alternative Service Delivery**

An introduction to nonprofit and alternative service delivery and how this transforms the way public services are delivered and the conception and definition of the public sector. Themes addressed include: control and accountability; the role of trust in contractual relationships; balancing accountability and risk; performance measurement. Prerequisite: eight upper division units in political science or permission of the department. Students are strongly advised to have taken POL 251, 252 or 253.

**POL 470-4 African Social and Political Thought**

Covers African social and political thought (including that of the Diaspora) since the nineteenth century. Includes approaches such as 'traditional' philosophy, the writing of history, and the specific problems of understanding the history of political thought in the context of a 'post-colonial' society. Prerequisite: eight upper division units in political science or permission of the department.

**POL 471-4 Political Economy of North America**

Deals with the governance implications of ongoing developments in political economy in the NAFTA area. Prerequisite: eight upper division units in political science or permission of the department.

**POL 481-4 Identity Politics**

Examines the impact of identity politics on the dynamics and organization of political systems. Topics include the impact of ethnic, racial and/or religious diversity on modes of political representation, the formation of public policy, and the quest for political stability and national identity. Prerequisite: eight upper division units in political science or permission of the department.

**POL 496-1 Political Science Extended Essay Option**

Students may extend a major term paper for a class with intensive instruction and feedback from the instructor to receive extra credit. May only be taken twice. Prerequisite: 90 units. By application to the undergraduate chair.

**POL 497-4 Directed Practice in Political Science**

This course involves interpretation of, and expansion on, practical experience in political life, under the supervision of a single faculty member. Students enrolling in the course must have their program of practical experience and academic writing assignments approved by both the supervisor and the department's undergraduate committee prior to enrolment. Prerequisite: Permission of the department; CGPA of 3.0; upper division GPA of 3.33. Students may count only one POL 497 towards meeting their upper division political science requirements. This course is available only for POL majors.

**POL 498-4 Directed Readings in Political Science**

Directed readings in a selected field of study under the direction of a single faculty member. A paper will be required. Students enrolling in this course must have their program of readings approved (by the supervising instructor and the undergraduate studies committee) prior to enrolment. Prerequisite: permission of the department. Students may count only one readings course as credit towards their upper division political science requirements.

**POL 499-5 Honors Essay**

Prerequisite: permission of the department (see regulations listed in the Department of Political Science section).

**POL 801-5 Theoretical Perspectives in Political Science**

Students with credit for POL 813 may not take this course for further credit.

**POL 802-5 Political Research: Design and Analysis****POL 812-5 Seminar in Modern Political Theory****POL 814-5 Normative Political Theory****POL 821-5 Canadian Government and Politics****POL 825-5 Canadian Political Economy****POL 826-5 Parties and Ideologies in Canada****POL 827-5 Issues in Canadian Government and Politics****POL 829-5 Internship****POL 830-5 Comparative Politics: Methods and Approaches****POL 837-5 Issues in Comparative Politics****POL 838-5 Government and Politics of Industrialized Countries****POL 839-5 Comparative Development****POL 841-5 International Relations****POL 842-5 International Law and Organizations****POL 843-5 Canadian Foreign Policy****POL 844-5 International Political Economy****POL 845-5 Foreign Policy Analysis****POL 846-5 International Security Studies****POL 847-5 Political Economy of North America**

Deals with the governance implications of ongoing developments in political economy in the NAFTA area.

**POL 848-5 Global Political Economy of Development**

Provides a perspective on global political economy informed by the historical experiences of the 'south.' Examines the making of the third world from a historical perspective and engages with key contemporary issues in understanding development through the global political economy.

**POL 849-5 Issues in International Relations**

This is a selected topics course.

**POL 851-5 Public Policy in Canada****POL 852-5 Urban Government and Politics****POL 853-5 Public Administration****POL 855-5 Science, Technology and Public Policy****POL 856-5 Issues in Social and Economic Policy****POL 861-5 Issues in Political Development**

Students with credit for POL 837-5 may not take this course for further credit.

**POL 870-5 African Social and Political Thought**

Introduces Africana social and political thought from the nineteenth century to the present. Examines a range of Africana political traditions, thinkers and texts, organized around specific themes: transatlantic slavery, the colonial encounter, self-determination and sovereignty, politics and society, questions of race and gender.

**POL 890-0 PhD Seminar****POL 891-0 Master's Seminar****POL 892-6 Research Project****POL 893-5 Readings in Political Sciences****POL 894-5 Readings in Political Science II****POL 895-6 Extended Essays****POL 896-6 PhD Comprehensive Exam****POL 897-6 Field Exam in Major Areas of MA Concentration****POL 898-6 MA Thesis****POL 899-6 PhD Thesis Research**

## Portuguese PORT

### Faculty of Arts and Social Sciences

### Department of Linguistics

### Language Training Institute

**PORT 102-3 Introductory Portuguese I**

Elementary-level skills and knowledge in Portuguese grammar, reading, vocabulary, listening, speaking and writing. Students with any prior knowledge or experience in Portuguese beyond the level of this course may not enrol in this course.

**PORT 103-3 Introductory Portuguese II**

Intermediate-level skills and knowledge in Portuguese grammar, reading, vocabulary, listening, speaking and writing. Students with any prior knowledge or experience in Portuguese beyond the level of this course may not enrol in this course. Prerequisite: PORT 102, or permission from the instructor. All

students must attend a placement meeting and receive permission to enrol.

## Psychology PSYC Faculty of Arts and Social Sciences

### PSYC X99W-3 Brain, Mind and Society

Introduces the student to issues in Psychology by surveying the research on brain and behaviour and the implications of this work for individuals and society. Beginning with neurons, this course explores the transition to human experience. Writing/Breadth-Science.

### PSYC 100-3 Introduction to Psychology I

Acquaints the student with the major issues in contemporary psychology and considers the historical antecedents. Special attention is given to questions of methodology and research design in psychology. Topics in physiological psychology, perception, learning and motivation are considered. Students with credit for PSYC 101 may not take PSYC 100 for further credit. Breadth-Social Sciences.

### PSYC 102-3 Introduction to Psychology II

Acquaints the student with major issues in contemporary psychology and considers their historical antecedents. Topics in learning, cognition, social psychology and abnormal psychology are considered. Recommended: PSYC 100 is recommended but not required. Students with credit for PSYC 101 may not take PSYC 102 for further credit. Breadth-Social Sciences.

### PSYC 106-3 Psychological Issues in Contemporary Society

Relates contemporary knowledge from psychology to current social problems. Provides relevant information from studies pertaining to problems such as attitude development, prejudice, race relations, addiction, behavior technology, and family pathology. Breadth-Social Sciences.

### PSYC 201W-4 Introduction to Research Methods in Psychology

An introduction to the procedures used in psychological research, and to the logic underlying them. Topics include the strengths and weaknesses of different approaches to research, the formulation of testable questions, the control of extraneous influences, the measurement of effects, and the drawing of valid conclusions from empirical evidence. Provides a background for senior psychology courses since it offers a basis for the critical evaluation and conduct of research. Prerequisite: PSYC 100 or 102 (or PSYC 101). See the Letters of Permission section within the undergraduate Department of Psychology. Writing/Quantitative.

### PSYC 207-3 Introduction to History of Psychology

Examines the development of modern psychology from the founding of the first laboratories in the late 19th century to the present. The development and revisions of the major theoretical systems of psychology are examined from a comparative and critical perspective. Prerequisite: PSYC 100 or 102 (or PSYC 101). Students with credit for PSYC 308 may not take PSYC 207 for further credit.

### PSYC 210-4 Introduction to Data Analysis in Psychology

Covers basic descriptive and inferential techniques most appropriately applied to the various forms of data from psychological research. Should be completed by majors and honors before the end of term 4. Prerequisite: PSYC 201 and BC high school Math 11 with a minimum grade of B-. See the Letters of Permission section within the undergraduate Department of Psychology. Quantitative.

### PSYC 221-3 Introduction to Cognitive Psychology

Introduction to the study of cognitive and perceptual processes. Topics include memory, perception, attention, language, mental imagery, creativity, judgement and decision-making, and an introduction to cognitive disorders such as Alzheimer's disease, dyslexia, aphasia and attention-deficit disorder. Prerequisite: PSYC 100 (or PSYC 101). Students with credit for PSYC 320 may not take PSYC 221 for further credit.

### PSYC 241-3 Introduction to Abnormal Psychology

Introduces students to the area of abnormal psychology. Topics include the definition and classification of pathological behavior, factors involved in the development of pathology, and evaluation of therapy outcome. Prerequisite: PSYC 102 (or 101). Students with credit for PSYC 340 may not take PSYC 241 for further credit.

### PSYC 250-3 Introduction to Developmental Psychology

Considers the psychological and physical aspects of human development from conception through middle childhood. Topics include social, emotional, language, cognitive, perceptual and physical development. Prerequisite: PSYC 102 (or 101). Students with credit for PSYC 350 or 351 may not take PSYC 250 for further credit.

### PSYC 260-3 Introduction to Social Psychology

Examines methodology and content in social psychology. Topics include: attitudes and values; social perception and cognition; group behavior; social inclusion; prejudice, discrimination, and sexism; aggression; altruism, interpersonal attraction and interpersonal relationships. Prerequisite: PSYC 102 (or 101). Students with credit for PSYC 360 may not take PSYC 260 for further credit.

### PSYC 268-3 Introduction to Law and Psychology

An introduction to the area of law and psychology. The role and influence of psychology in the legal system will be discussed. Topics include: social psychology and law, developmental psychology and law, juvenile justice, experimental psychology and law, mental disability and law. Prerequisite: PSYC 102 (or 101). Students with credit for PSYC 369 may not take this course for further credit.

### PSYC 270-3 Introduction to Theories of Personality

Introduces students to classic and contemporary theories, conceptual debates, and empirical research in the area of personality. Prerequisite: PSYC 102 (or 101).

### PSYC 280-3 Introduction to Biological Psychology

Surveys the major areas in biological psychology. Topics include the basics of neuroanatomy and nerve cell function, the behavioral and physiological effects of drugs and hormones in the nervous system, evolutionary perspectives on the brain and behavior, and the biopsychology of vision, the chemical senses, hearing, movement, biological rhythms, sex, and cognitive processes. Prerequisite: PSYC 100 (or 101). Recommended: BISC 101. Breadth-Science.

### PSYC 300W-3 Critical Analysis of Issues in Psychology

Trains students to evaluate critically important issues from the main area of Psychology (e.g. Biological, Cognitive, Developmental, Law and Psychology, Social, Theory and Methods) and to communicate their ideas clearly in written form. The content may vary in different offerings of the course. Prerequisite: PSYC 201. Writing.

### PSYC 301-4 Intermediate Research Methods and Data Analysis

A continuation of PSYC 201 and 210. Provides extensions of the basic theory and methods of research design and data analysis. Includes discussions of the analysis of substantive problems, the choice of appropriate research designs, and special problems that arise in the analysis of psychological data. Prerequisite: PSYC 201 and 210 and a minimum CGPA of 2.67. See the Letters of Permission section within the undergraduate Department of Psychology. Quantitative.

### PSYC 303-3 Perception

An introduction to the study of perceptual processes with an emphasis on seeing and hearing. Topics include the perception of features, objects, motion, depth, time, visual illusions, and individual differences in perceptual ability. Prerequisite: PSYC 201 and one of 221 (or 320) or 335.

### PSYC 325-3 Memory and Mind

Examination of the phenomena of memory and the retention and reproduction of information. Considers the conditions and principles of retention and recall in short- and long-term memory. Prerequisite: PSYC 201, and 221 (or 320).

### PSYC 330-3 Attention

Survey the different aspects of paying attention. Topics include the effects of selective and divided attention on perceptual and cognitive function; the role of attention in human performance; attentional dysfunction and attention-deficit disorder; and the development of attentional capacity across the life span from newborns to the elderly. Prerequisite: PSYC 201, and 221 (or 320).

### PSYC 335-3 Sensation

Examines the properties of the visual, auditory, olfactory, gustatory, and kinesthetic systems and receptor mechanisms with a strong emphasis on physiology. Topics include psychophysical measurement of sensations, cross-modal organization and computational modeling of sensory processes, and the interface between sensory and perceptual processes. Prerequisite: PSYC 201, 221, and one of 280 or 303.

### PSYC 342-3 Practicum I

First term of work experience in the Psychology Co-operative Education program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: PSYC 201 and 210. Students should apply to the co-op co-ordinator one term in advance.

### PSYC 343-3 Practicum II

Second term of work experience in the Psychology Co-operative Education program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of PSYC 342 and 45 units with a minimum CGPA of 3.0.

### PSYC 353-3 Infant Development

Examines research and theory concerning social, emotional, and cognitive development in infancy. Prerequisite: PSYC 201 and 250 (or 350 or 351).

### PSYC 354-3 Development of Children's Thinking

Examines research and theory concerning the origins and development of cognition in humans. Traces the development of language and children's thinking about the physical and social world from birth to adulthood, with a focus on infancy and childhood. Prerequisite: PSYC 201 and 250 (or 350 or 351).

### PSYC 355-3 Adolescent Development

Considers human development from the end of childhood to the beginning of the adult stage, from a bio-social point of view. Included among the topics are psychological effects of sexual maturation, choice of vocation and marriage partner, effects of participation in the gang and youth organization,

cultural variations in the patterns of growth.

Prerequisite: PSYC 201 and 250 (or 350 or 351).

### **PSYC 356-3 Developmental Psychopathology**

Examines theoretical approaches, research findings, and treatment outlooks concerning problems and disorders in childhood development. Prerequisite: PSYC 201, 241 (or 340), and 250 (or 350 or 351).

### **PSYC 357-3 Adulthood and Aging**

Considers human development from young adulthood to old age. Included are theories of adult development and aging; environmental and biological factors in aging; and the effects of aging on sensation, perception, learning, cognition, personality, psychopathology, and social relations. Prerequisite: PSYC 201 and 250 (or 350 or 351) or acceptance into the diploma program in gerontology.

### **PSYC 358-3 Language and Social Interaction**

Reviews the four major psychological models of talk and develops a new social pragmatic model of talk-as-social-interaction. The social pragmatic model is then applied to research in social development. Through lectures, course readings, and hands-on exercises in the tutorials (e.g., tape recording, transcription and analysis of natural talk) students will acquire competence in describing and analyzing talk from a social pragmatic perspective, and applying social pragmatics to an examination of central issues in social development. Prerequisite: PSYC 201 and 250 (or 350 or 351). Students who have taken PSYC 367 may not take this course for further credit.

### **PSYC 362-3 Close Relationships**

Reviews theory and research on the psychology of interpersonal relations, with particular attention to personal relationships. Topics include theoretical perspectives on relationships; interpersonal attraction; dating, marriage, and friendship; social networks; cognitive processes and communication dynamics within relationships; and power and aggression within relationships. Prerequisite: PSYC 201 and 260 (or 360).

### **PSYC 363-3 Intergroup Relations**

Provides an overview of the social psychological study of intergroup relations, considering classic and contemporary theory and research in the field. It includes discussions of the application of these ideas and findings to important social contexts, and explores ways in which the social psychological study of intergroup relations can help us understand and inform efforts to influence relevant social change. Prerequisite: PSYC 201 and 260 (or 360).

### **PSYC 365-3 Health Psychology**

Explores applications of psychological principles to health and health care. The development of the field of health psychology is traced and major topics introduced. Topics include health promotion, the hospital experience, communication in medical settings, coping with serious illness, psychoneuroimmunology, and field-specific methodology. Prerequisite: PSYC 201 and 260 (or 360).

### **PSYC 371-3 Intervention: Process and Outcome**

Reviews the major approaches to psychological intervention in terms of theory, practice and outcome evaluation. The course will examine both the scientific and practitioner components of intervention. Prerequisite: PSYC 201 and 241 (or 340). PSYC 270 (or 370) is recommended. Students with credit for PSYC 375 may not take PSYC 371 for further credit.

### **PSYC 376-3 Experimental Psychology and Law**

The roles of experimental developmental, cognitive, and social psychology in the understanding of behavior and perceptions of individuals in legal contexts. Topics include eyewitness testimony, autobiographical memory, interviewing, deception detection, and juror decision-making. Prerequisite:

PSYC 201 and 268. PSYC 210 and 325 are recommended. Students who have taken PSYC 368 may not take this course for further credit.

### **PSYC 379-3 Clinical Forensic Psychology**

Clinical approaches to the understanding of behavior in criminal and civil forensic settings. Topics related to the assessment, treatment, and management of people suffering from mental disorder. Prerequisite: PSYC 201 and 268. PSYC 241 is recommended.

### **PSYC 381-3 Behavioral Endocrinology**

Examines the ways in which hormones influence the nervous system, regulating essential behaviors such as eating, drinking, sex, parenting, sleep, emotional behavior and cognitive processes. Prerequisite: PSYC 201 and 280.

### **PSYC 382-3 Cognitive Neuroscience**

Examines the neurophysiological bases of cognitive and perceptual phenomena such as memory, attention, language, thinking, imagery, vision, audition, and sensory processes. The study of human cognitive performance with measurement techniques such as ERP, PET, and MRI is also discussed. Prerequisite: PSYC 201, 221, and 280.

### **PSYC 383-3 Psychopharmacology**

A survey of how psychoactive drugs affect brain function to alter consciousness and behavior. Topics will include cellular effects of drugs that affect the central nervous system and discussions of the psychological and social effects of those drug-induced changes in the brain. Research on drug abuse and addictions and means of treating them will be covered. Historical, social and legal aspects of non-medical drug use will be discussed, as will the use of medications for the treatment of anxiety, depression, schizophrenia, dementias and other psychological disorders. Prerequisite: PSYC 201 and 280. Students with credit for PSYC 483 may not take PSYC 383 for further credit.

### **PSYC 384-3 Developmental Psychobiology**

A survey of research on normal and abnormal brain development and its behavioral consequences, covering the fetal period through old age. Genetic, prenatal, nutritional, and experiential effects on brain and behavior will be discussed. Topics to include: bio-developmental aspects of sensory-motor, social, linguistic, intellectual, and sexual behavior. Effects of head trauma, disease, abnormal environments, and aging will also be covered. Prerequisite: PSYC 201 and 280. Recommended: PSYC 250.

### **PSYC 385-3 Evolutionary Psychology**

Topics such as altruism, parental care, mate choice, sex differences in behavior, aggression, dominance and territoriality are considered from an evolutionary perspective. The role of heredity and environment in the development of these behaviors is also discussed. Prerequisite: PSYC 201.

### **PSYC 386-4 Laboratory in Behavioral Neuroscience**

An overview of techniques used for studying the biological basis of behavior in humans and animals. Examines the logic and limitations of specific research methods. Provides an opportunity to master a set of techniques and to conduct supervised research projects in the laboratory. Prerequisite: PSYC 201 and 280. Students with credit for PSYC 481 may not take PSYC 386 for further credit.

### **PSYC 387-3 Human Neuropsychology**

Examines the neural processes that underlie cognitive functioning and behavior. Topics include neuroanatomy, neuropathology, brain damage, neurological diseases (e.g., schizophrenia, Alzheimer's, Parkinson's), and problems in spatial ability, memory, language, mood and anxiety. Prerequisite: PSYC 201, 221, and 280.

### **PSYC 388-3 Biological Rhythms and Sleep**

Behavior and physiology are regulated by biological clocks, which function to synchronize the organism optimally with its environment. In this course we examine the adaptive role of clocks in animal behavior, the neural and endocrine mechanisms of daily, monthly and yearly rhythms, and the relevance of clocks, rhythms and sleep to human performance and psychopathology. We will also consider the mechanisms and functions of sleep states. Prerequisite: PSYC 201 and 280. Students with credit for PSYC 488 may not take PSYC 388 for further credit.

### **PSYC 402-4 Selected Topics in History and Theoretical Psychology**

Examines the basic ideas concerning the relationship between mind and body and the empirical and rational foundations of scientific thought as applied to modern psychology. Students will be expected to analyze either the historical development of contemporary approaches or theoretical issues that are relevant to their area of interest in psychology. Prerequisite: PSYC 201, and one of 207 (or 308) or 307, 60 units, and a CGPA of 3.0.

### **PSYC 410-4 Research Design I**

Reviews the basic logic of controlled experimentation, and focuses on analysis of variance designs commonly used in psychological research. Particular emphasis is given to the relative merits of the several designs when there are multiple research questions to be answered. Prerequisite: PSYC 201, 210, 301, 60 units, and a CGPA of 3.0. Quantitative.

### **PSYC 411-4 Research Design II**

Focuses on multivariate regression and correlation models. Deals with ways of answering questions when direct experimental manipulation is not feasible, and demonstrates the utility of the principles involved for solving problems other than those for which they were first proposed. Prerequisite: PSYC 201, 210, 301, 60 units, and a CGPA of 3.0. Recommended: PSYC 410. Quantitative.

### **PSYC 415-4 Selected Topics in Measurement**

An intensive exposure to selected topics in measurement theory and psychometrics including, e.g., advanced classical test theory, modern test theory, and factor analysis. The content will vary, offering to offering. Prerequisite: PSYC 201, 210, 301, 60 units, and a CGPA of 3.0. Recommended: PSYC 410 and 411.

### **PSYC 430-4 Selected Topics in Cognition I**

Prerequisite: PSYC 201, 210, 221 (or 320), 280, 60 units, and a CGPA of 3.0.

### **PSYC 432-4 Selected Topics in Cognition II**

Prerequisite: PSYC 201, 210, 221 (or 320), 280, and 60 units, and a CGPA of 3.0.

### **PSYC 441-4 Selected Topics in Clinical Psychology**

An intensive examination of a selected topic in clinical psychology, varying to include offerings such as psychopathology (adult or child), individual differences in cognitive abilities, behavioral approaches to intervention, addiction, and other special topics. Prerequisite: PSYC 201, 210, 371 (or 375), and 60 units, and a CGPA of 3.0. Students with credit for PSYC 444 may not take PSYC 441 for further credit if similar topics are covered. See department for further information.

### **PSYC 442-3 Practicum III**

Third term of work experience in the Psychology Co-operative Education program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of PSYC 342 and 343 and 60 units with a minimum CGPA of 3.0.

**PSYC 443-3 Practicum IV**

Fourth term of work experience in the Psychology Co-operative Education program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of PSYC 442 and 75 units with a minimum CGPA of 3.0.

**PSYC 450-4 Selected Topics in Developmental Psychology I**

Prerequisite: PSYC 201, 210, 250 (or 350 or 351), and 60 units, and a CGPA of 3.0.

**PSYC 451-4 Selected Topics in Developmental Psychology II**

Prerequisite: PSYC 201, 210, 250 (or 350 or 351), and 60 units, and a CGPA of 3.0.

**PSYC 452-4 Selected Topics in Developmental Psychology III**

Prerequisite: PSYC 201, 210, 250 (or 350 or 351), and 60 units, and a CGPA of 3.0.

**PSYC 453-4 Selected Topics in Developmental Psychology IV**

Prerequisite: PSYC 201, 210, 250 (or 350 or 351), 60 units, and a CGPA of 3.0.

**PSYC 457-3 Behavioral Neuroscience Undergraduate Honors Thesis Proposal**

Directed study and research leading to an Honors thesis proposal (PSYC 459/KIN 459). Prerequisite: 90 units, including PSYC 301 with a minimum grade of B and permission of the Chair of Behavioral Neuroscience Coordinating Committee. This course is identical to KIN 457 and students may not take both courses for credit.

**PSYC 459-9 Behavioral Neuroscience Undergraduate Honors Thesis**

A written thesis based on research previously proposed in PSYC 457/KIN 457. Prerequisite: a minimum grade of B in PSYC 457/KIN 457. This course is identical to KIN 459 and students may not take both courses for credit.

**PSYC 461-4 Topics in Social Psychology I**

Prerequisite: PSYC 201, 210, 260 (or 360), 60 units, and a CGPA of 3.0.

**PSYC 462-4 Topics in Social Psychology II**

Prerequisite: PSYC 201, 210, 260 (or 360), 362, 60 units, and a CGPA of 3.0.

**PSYC 463-4 Topics in Social Psychology III**

Prerequisite: PSYC 201, 210, 260 (or 360), 60 units, and a CGPA of 3.0.

**PSYC 464-4 Topics in Social Psychology IV**

Prerequisite: PSYC 201, 210, 260, 60 units, and a CGPA of 3.0.

**PSYC 476-4 Topics in Psycholegal Psychology I**

Prerequisite: PSYC 201, 210, 268, 376, 60 units, and a CGPA of 3.0. Students who have taken PSYC 468 may not take this course for further credit.

**PSYC 477-4 Topics in Psycholegal Psychology II**

Prerequisite: PSYC 201, 210, 268, 376, 60 units, and a CGPA of 3.0. Students who have taken PSYC 468 may not take this course for further credit.

**PSYC 479-4 Topics in Psycholegal Psychology III**

Prerequisite: PSYC 201, 210, 268, 379, 60 units, and a CGPA of 3.0. Students who have taken PSYC 468 may not take this course for further credit.

**PSYC 480-4 Selected Topics in Biological Psychology I**

Prerequisite: PSYC 201, 210, 221, 280, 60 units, and a CGPA of 3.0.

**PSYC 482-4 Selected Topics in Biological Psychology II**

Prerequisite: PSYC 201, 210, 221, 280, 60 units, and a CGPA of 3.0.

**PSYC 490-4 Honors Project**

An in-depth investigation of a topic in psychology, culminating in a critical literature review and the formulation of a research proposal. Prerequisite: PSYC 300 and 301, both with a minimum grade of 3.0.

**PSYC 491-3 Selected Topics in Psychology**

Prerequisite: PSYC 201, 210, 60 units, a CGPA of 3.0, and permission of the department.

**PSYC 492-5 Selected Topics in Psychology**

Prerequisite: PSYC 201, 210, 60 units, a CGPA of 3.0, and permission of the department.

**PSYC 493-495-3 Directed Studies**

Independent reading or research in topics selected in consultation with the supervising instructor.

Prerequisite: PSYC 201, 210, 60 units, a CGPA of 3.0, and permission of the department. See the Directed Studies Courses section within the undergraduate Department of Psychology section.

**PSYC 499-6 Honors Project**

The research proposed in PSYC 490 is executed and the results are written up in thesis format.

Prerequisite: PSYC 490.

**PSYC 600-3 Biological Bases of Behavior****PSYC 601-3 Cognitive and Affective Bases of Behavior****PSYC 602-3 Developmental and Social Bases of Behavior****PSYC 603-3 Individual Differences****PSYC 700-3 Professional Issues in Psychology****PSYC 705-3 Proseminar in History and Systems****PSYC 715-1.5 Proseminar in Measurement****PSYC 720-3 Proseminar in Learning****PSYC 725-3 Proseminar in Cognition****PSYC 730-3 Proseminar in Perception****PSYC 740-3 Proseminar in Motivation****PSYC 744-3 Proseminar in Psychopathology****PSYC 750-3 Proseminar in Developmental Psychology****PSYC 760-3 Proseminar in Social Psychology****PSYC 770-3 Proseminar in Personality****PSYC 780-3 Proseminar in Physiological Psychology****PSYC 785-3 Proseminar in Animal Behavior****PSYC 790-3 Proseminar in Law and Psychology****PSYC 804-3 Seminar in Evaluation****PSYC 806-3 Advanced Topics in Assessment**

Prerequisite: PSYC 820, 821, 822, 823, 824, or permission of the instructor.

**PSYC 807A-3 Advanced Topics in Intervention: Child Therapy**

Current theoretical and empirical issues in the area of child and adolescent therapy. Prerequisite: PSYC 820, 821, 822, 823, 824 or permission of the instructor.

**PSYC 807B-3 Advanced Topics in Intervention: Family Therapy**

Provides an overview of the current theoretical and empirical issues in the area of family therapy. Prerequisite: PSYC 820, 821, 822, 823, 824 or permission of the instructor.

**PSYC 807C-3 Advanced Topics in Intervention: Group Therapy**

Conceptual and theoretical issues in group therapy. Prerequisite: PSYC 820, 821, 822, 823, 824 or permission of the instructor.

**PSYC 807D-3 Advanced Topics in Intervention: Marital Therapy**

Conceptual and theoretical issues in Marital Therapy. Prerequisite: PSYC 820, 821, 822, 823, 824 or permission of the instructor.

**PSYC 807E-3 Advanced Topics in Intervention: Cognitive-Behavior Therapy**

Conceptual and theoretical issues in Cognitive Behavior therapy. Prerequisite: PSYC 820, 821, 822, 823, 824 or permission of the instructor.

**PSYC 808-3 Advanced Topics in Evaluation**

Prerequisite: PSYC 820, 821, 822, 823, 824, or permission of the instructor.

**PSYC 809-3 Advanced Topics in Applied Psychology**

Prerequisite: PSYC 820, 821, 822, 823, 824, or permission of the instructor.

**PSYC 810-3 Seminar in Social Psychology and Law**

Prerequisite: PSYC 790.

**PSYC 815-3 Mental Health Law and Policy**

Prerequisite: PSYC 790.

**PSYC 819-3 Ethics and Professional Issues**

Prerequisite: graduate program standing. Graded on a satisfactory/unsatisfactory basis.

**PSYC 820-3 Seminar in Individual Assessment**

Prerequisite: admission to the clinical program or permission of the instructor.

**PSYC 821-2 Practicum in Individual Assessment**

Corequisite: enrolment in PSYC 820, graduate standing in the clinical program, or permission of the instructor. Graded on a satisfactory/unsatisfactory basis.

**PSYC 822-3 Seminar in Intervention**

Prerequisite: graduate standing in the clinical program, or permission of the instructor.

**PSYC 823-2 Practicum in Intervention**

Prerequisite: enrolment in PSYC 822, graduate standing in the clinical program, or permission of the instructor. Graded on a satisfactory/unsatisfactory basis.

**PSYC 824-3 Research Issues in Psychology**

Prerequisite: Admission to the Masters or Doctoral program.

**PSYC 825-2 Intervention (Ongoing)**

Prerequisite: admission to the clinical program. Required every term prior to internship except when granted 'on leave' status from PSYC 825, or when enrolled in PSYC 880 and also inactive at the Clinical Psychology Centre (CPC). Graded on a satisfactory/unsatisfactory basis.

**PSYC 830-3 Seminar in Child Evaluation and Treatment Formulation**

Prerequisite: PSYC 750, 820.

**PSYC 831-2 Practicum in Child Evaluation and Treatment Formulation**

Prerequisite: PSYC 750, 820. Corequisite: PSYC 830.

**PSYC 835-3 Special Topics in Civil Forensic Psychology**

Prerequisite: PSYC 790, 815.

**PSYC 836-3 Special Topics in Criminal Forensic Psychology**

Prerequisite: PSYC 790, 815.

**PSYC 860-5 Social****PSYC 870-5 Personality****PSYC 880-3 Practicum**

Full-time clinical work for four months in an approved setting. Prerequisite: PSYC 744, 770, 820, 821, 910, 911. Graded on a satisfactory/unsatisfactory basis.

**PSYC 881-3 Senior Practicum**

Prerequisite: admission to the doctoral clinical program. Graded on a satisfactory/unsatisfactory basis.

**PSYC 882-3 Neuropsychology Practicum**

Prerequisite: admission to the clinical program with a specialization in neuropsychology. Graded on a satisfactory/unsatisfactory basis.

**PSYC 883-3 Practicum III****PSYC 884-3 Practicum IV****PSYC 886-9 Internship**

Full-time clinical work for 12 months in an approved setting. Prerequisite: equivalent of the MA clinical program, three PhD level courses, successful completion of the PhD comprehensive examinations, and successful defence of the PhD research proposal. Graded on a satisfactory/unsatisfactory basis. Enrolment in PSYC 886 must be continued for a total of three consecutive terms.

**PSYC 890-3 Practicum in Clinical Forensic Psychology**

Prerequisite: PSYC 790, 835 or 836.

**PSYC 892-3 Research/Policy Practicum in Law and Psychology**

Prerequisite: PSYC 790.

**PSYC 897-3 Research****Project/Law&Psyc/Forensic Psyc**

Prerequisite: PSYC 790.

**PSYC 898-6 MA Thesis****PSYC 899-6 PhD Thesis****PSYC 905-3 Seminar in History****PSYC 907A-3 Advanced Topics in Biological Psychology: Mental Health Disorders****PSYC 907B-3 Neurocognitive Disorders****PSYC 907C-3 Advanced Topics in Biological Psychology: Neuropsychology of Recovery****PSYC 907D-3 Advanced Topics in Biological Psychology: Cognitive Aging and Dementia****PSYC 907E-3 Advanced Topics in Biological Psychology: Psychopharmacology****PSYC 907F-3 Advanced Topics in Biological Psychology: Cognitive Neuroscience****PSYC 910-3 Research Design I: Experiments**

Reviews the basic logic of controlled experimentation, and focuses on analysis of variance designs commonly used in psychological research. Particular emphasis is given to the relative merits of the several designs when there are multiple research questions to be answered.

**PSYC 911-3 Research Design II: Research Studies**

Focuses on multivariate regression and correlation models. Deals with ways of answering questions when direct experimental manipulation is not feasible, and emphasizes new applications.

**PSYC 912-914-1.5 Research Seminar****PSYC 915-3 Seminar in Measurement****PSYC 916-918-1.5 Research Seminar**

Research seminars are designed specifically to enable graduate students in Psychology to plan, execute, and analyse research including that leading to MA and PhD degrees. The seminars will provide directions for future research, critical discussion of pending designs, aid in resolving problems in ongoing studies, and alternative interpretations of results of completed projects. The research seminar courses are graded on a satisfactory/unsatisfactory basis.

**PSYC 920-3 Seminar in Learning****PSYC 925-3 Seminar in Cognitive Processes****PSYC 930-3 Seminar in Perception****PSYC 935-3 Seminar in Sensation****PSYC 940-3 Seminar in Motivation-Emotion****PSYC 944-3 Seminar in Psychopathology****PSYC 950-3 Seminar in Developmental Psychology****PSYC 960-3 Seminar in Social Psychology****PSYC 965-3 Seminar in Psycholinguistics****PSYC 970-3 Seminar in Personality****PSYC 980-3 Biological Psychology****PSYC 985-3 Seminar in Animal Behavior****PSYC 990-3 Seminar in Law and Psychology**

Prerequisite: PSYC 790.

**PSYC 997-3 Directed Studies****PSYC 998-3 Directed Readings**

Prerequisite: admission to the masters or doctoral program.

**PSYC 999-6 PhD Comprehensive Examination**

All students in the experimental and clinical psychology PhD programs are required to successfully complete the comprehensive exam.

## Public Policy Program MPP

### Faculty of Arts and Social Sciences

**MPP 800-5 Introduction to Public Policy Issues**

An introduction to a range of contemporary public policy issues that is designed to illustrate the complexity of good analysis and also to introduce alternative techniques of analysis. The course format is seminar presentations on topics linked to case studies introduced in other core courses in the MPP program. Seminars are presented by faculty, analysts from the public policy community, and students.

**MPP 801-5 Economic Foundations of Policy Analysis I**

An examination of the basic operation of a market economy and introduction to key economic concepts and techniques.

**MPP 802-5 Economic Foundations of Policy Analysis II**

Application of economic concepts and techniques to a variety of public policy issues.

**MPP 803-5 Political Foundations of Policy Analysis I**

The first of a two term sequence that examines the basic structures and processes of government in Canada and their context in the evolving Canadian political economy. It also introduces students to key actors in the policy process and examines their structure and behavior. Examples of relevant actors include federal, provincial and local state structures and agencies, and a variety of societal actors such as pressure groups, social movements, think tanks and other associations.

**MPP 804-5 Political Foundations of Policy Analysis II**

Building upon MPP 803, this course provides a detailed examination of the policy process – the stages through which public policies are developed. The course outlines the nature of the policy cycle and examines the formal and informal institutions and rules that affect policy actors in their deliberations and decisions. Specific attention is paid to the nature of policy communities and policy networks in Canada and their impact upon policy content and policy change.

**MPP 805-5 Research Techniques and Quantitative Methods I**

Research techniques will include survey design, implementation and analysis, statistical inference, and qualitative methods of analysis.

**MPP 806-5 Research Techniques and Quantitative Methods II**

Application of statistical quantitative methods for policy analysis, including analysis of variance, and regression techniques.

**MPP 807-5 Introduction to Policy Analysis**

An introduction to techniques of public policy analysis, evaluation, and simulation techniques. Group projects on current public policy issues will constitute a major portion of this course. Prerequisite: MPP 800, or permission of the instructor.

**MPP 808-5 Advanced Policy Analysis I**

Advanced policy analysis techniques, public affairs, communication, and client interaction are covered and applied by students to individual projects on current public policy issues. This course will constitute the project component of the program.

**MPP 809-5 Advanced Policy Analysis II**

Advanced policy analysis techniques are covered and applied by students to individual projects on current public policy issues. This course will constitute the project component of the program. Students are required to present and defend their projects in this course.

**MPP 810-5 Issues in Public Policy I**

This course provides an opportunity to cover topics appropriate to the program but not covered extensively in the core courses.

**MPP 811-5 Issues in Public Policy II**

This course provides an opportunity to cover topics appropriate to the program but not covered extensively in the core courses.

**MPP 812-5 Selected Topics in Public Policy I**

This course provides an opportunity to cover topics appropriate to the program but not covered extensively in the core courses.

**MPP 813-5 Selected Topics in Public Policy II**

Specialized study in topics germane to the field of public policy.

**MPP 814-5 Selected Topics in Public Policy III**

This course provides an opportunity to cover topics appropriate to the program but not covered extensively in the core courses.

**MPP 815-5 Selected Topics in Public Policy IV**

This course provides an opportunity to cover topics appropriate to the program but not covered extensively in the core courses.

**MPP 816-5 Selected Topics in Public Policy V**

This course provides an opportunity to cover topics appropriate to the program but not covered extensively in the core courses.

**MPP 825-5 MPP Directed Readings I****MPP 826-5 MPP Directed Readings II****MPP 850-0 MPP Internship**

Students who do not have prior work experience in public policy are placed in a public or private organization connected to public policy. The work they undertake must be of sufficient depth and breadth to allow the student the opportunity to demonstrate his or her acquired knowledge and skills. Students will be required to produce a work report that will be an appraisal of the student's work experience.

## Publishing Program PUB

### Faculty of Communication, Art and Technology

**PUB 600-4 Topics in Publishing Management**

An analysis of management issues essential to the daily operation of publishing firms. Emphasis will be placed on the distinctive nature of publishing as a cultural/information industry, the applicability of theory and practice in marketing and accounting and the legal underpinnings of publishing. Prerequisite: admittance to the program.

**PUB 601-4 Editorial Theory and Practice**

The theoretical component of this course focuses on theories of composition and rhetoric. The practical component focuses on the various types of editing that take place in publishing. Students are examined on both the theory and their attained competence in editing. Prerequisite: admittance to the program.

**PUB 602-4 Design and Production Control in Publishing**

A consideration of the theory, principles, traditions and current trends in publication design as applied to print and electronic publishing. Students will undertake design exercises in addition to learning the relationship between design, costing and print production. Prerequisite: admittance to the program.

**PUB 605-5 Book Publishing Project**

Students are assigned to groups (simulated book publishing companies) and are given a company profile for which they develop a season's titles. They form a team based on industry roles: publisher, editor, subrights manager, production manager, art director, promotion and marketing manager. Each team produces the editorial profile, costing and marketing plans for the list, designs the covers and makes a final presentation to an industry panel.

**PUB 606-4 Magazine Publishing Project**

Students are assigned to groups and form a team based on common roles in the industry: publisher, comptroller, editor, production manager, art director, advertising director, marketing and distribution manager. In consultation with faculty and industry speakers the team develops a magazine concept, creates a business plan including cost projections, and identifies the readership demographics and potential. Design mock-ups are produced and a final presentation made to an industry panel.

**PUB 607-4 Publishing Technology Project**

Students work in a team environment to explore particular publishing technologies that have yet to achieve widespread industry use. The teams design and develop a working implementation and produce documentation and written specifications on that implementation for industry review.

**PUB 800-4 Publishing Industry Structure, Functioning and Policy**

An examination of the contemporary state and developing trends in the Canadian publishing industry. Emphasis is placed on book publishing, business dynamics, government policy, and international trade. Attention is also given to magazine and online publishing and comparisons with other countries are drawn. Prerequisite: admittance to the program.

**PUB 801-4 History of Publishing**

A consideration of publishing from the time of Gutenberg to the present day including discussion of the medium of print and its influence on human expression and thought. Emphasis will be placed on the role of publishing and publishing policies in society. Prerequisite: admittance to the program.

**PUB 802-4 Technology and the Evolving Form of Publishing**

An examination of the nature of technology and the social, cultural, legal, economic and political implications of evolving publishing business forms, publication formats, markets, policies and especially technology. Opportunities for Canadian publishing in domestic and global markets will be emphasized. Prerequisite: admittance to the program.

**PUB 897-6 Internship Project Report (Completion)****PUB 898-6 Internship Project Report Supervision and Evaluation**

Students complete their internship project report and work with their supervisory committee to bring it to a final acceptable form.

**PUB 899-6 Publishing Internship or Project**

Students are placed in an applied setting. The work they undertake must be of sufficient depth and breadth to allow the student the opportunity to demonstrate his or her acquired knowledge and skills. Students will be required to produce two reports; the first, a work report which will be an appraisal of the

student's work experience, and the second, a project report which will be an investigation and analysis of a particular problem or case. Prerequisite: admittance to the program.

## Resource and Environmental Management REM

### Faculty of Environment

**REM 100-3 Global Change**

This course provides students with an overview of global environmental change and its causes from a social science perspective, historically and at the present time. Population growth, an increasing ecological footprint and changes in ideology, social organization, economy and technology will be critically reviewed. New ways of thinking in natural and social science will be considered in relation to specific issues such as land, soil and food; energy, raw materials and solid waste; air pollution and transportation; water, oceans and fisheries; climate change; forestry and biodiversity; urbanization, and alternative futures. Breadth-Social Sciences.

**REM 311-3 Applied Ecology and Sustainable Environments**

Students will learn to apply the ecological concepts introduced in prerequisite courses to applied ecological problems at the population, community, and ecosystem levels of organization. Emphasis will be placed on processes which drive ecological dynamics, on recognizing those processes and dynamics in applied contexts, and on interpreting ecological data. Prerequisite: REM 100 or EVSC 200, BISC 204 or GEOG 215, STAT 101 or GEOG 251 or equivalent. Quantitative.

**REM 356-3 Institutional Arrangements for Sustainable Environmental Management**

This course provides an overview of some basic legislation, agencies, and policies which currently are in use to regulate the natural environment at the international, nation, provincial, regional, and local levels. Its purpose is to present a basic set of evaluative questions which can be used to address the effectiveness and efficiency of the environmental regulatory and management systems currently in use. Prerequisite: REM 100.

**REM 412-3 Environmental Modeling**

Students receive hands-on experience in the construction and analysis of computer simulation models of environmental and ecological systems and problems. Prerequisite: BISC 204, REM 100 or EVSC 200, MATH 151 or 154 or 157, MATH 152 or 155, STAT 101 or 103 or 301 or equivalent. Quantitative.

**REM 445-3 Environmental Risk Assessment**

Students receive theory and practical experience in the control and management of hazardous substances in the environment. This includes the application of techniques used to assess toxicological, ecological and human health risks of contaminants within the current regulatory framework. Prerequisite: MATH 151, 154, or 157; STAT 101, 103, or 301 or GEOG 251.

**REM 471-3 Forest Ecosystem Management**

Students will examine the problems of managing forest ecosystems for a variety of societal goals and objectives. The course will start with an examination of the ecological characteristics of forest ecosystems and their dynamics. The second section will focus on the objectives and tools of forest management in an ecological context. The final section of the course will focus on the institutions, economics and policies of forest management, with a focus on British Columbia's historical and current management issues. This course will involve lectures, group discussions, field trips, and exercises. Prerequisite: At

least one of REM 311, BISC 304, BISC 310, BISC 404, GEOG 315, or GEOG 316.

**REM 601-5 Social Science of Natural Resources Management**

An introduction to the relevance of social science perspectives, data and analytical tools in resource management, especially as these complement, supplement or critique perspectives from natural science or economics.

**REM 602-5 Natural Resource Management II: Advanced Seminar**

A professional group workshop course focusing on specific resource and environmental problems. Prerequisite: eight REM courses or permission of instructor.

**REM 609-5 Evaluation of Management Strategies for Living Resources**

This course examines living-resource management as a control system, including open loop (set point) control, closed loop (feedback) control, passive and active adaptive management. We explore the processes for the design of living-resource management systems, including interpreting policy as operational objectives, iterative development and stakeholder consultation, assessment methods, decision rules, evaluation using closed loop simulations, performance measures, trade-off between multiple objectives and methods for the presentation of results. The course includes a laboratory project to evaluate a management approach for a selected resource using computer simulations. Prerequisite: REM 611, 612 or 613 or permission of instructor.

**REM 610-5 Applied Environmental Toxicology and Environmental Management of Contaminants**

A study of the environmental behavior and toxic effects of chemical substances in the environment and the application of methodologies for their assessment and management.

**REM 611-5 Population and Community Ecology**

A review of population, community, and ecosystem ecology; implications of these areas for methods of resource management and environmental assessment.

**REM 612-5 Simulation Modelling in Natural Resource Management**

Methods of constructing simulations models and analyzing them through sensitivity analysis. Application of simulation modelling to research and management of environmental and resource systems. Topics will include management of wildlife, forests, insect pests, fisheries, pollution problems, energy resources, and recreational land use. Prerequisite: REM 611 or permission of the instructor.

**REM 613-5 Methods in Fisheries Assessment**

Introduction to fishing methods, fisheries ecosystems and the effects of fishing. Application of models of fish population dynamics, methods of data analysis and the quantification of uncertainty. Introduction to selected methods for providing scientific advice on the productivity and status of fish stocks. Focus will be primarily on biological aspects of fisheries assessment while illustrating how these interface with economic, social and institutional concerns of managers.

**REM 614-5 Advanced Methods in Fisheries Assessment**

Combines fish population dynamics with statistical estimation to provide quantitative assessments of the status of fish populations and fisheries. The course builds upon REM 613 by developing a broader range of biological and mathematical models of fish populations and management procedures, as well as approaches for testing the reliability of these

methods. Lab tutorial sessions develop quantitative models, estimation, and simulation approaches for performing and evaluating stock assessment methods that are currently applied in fisheries and wildlife management. Prerequisite: REM 613 or permission of instructor.

#### REM 621-5 Ecological Economics

Introduction to economic concepts for management of the environment and specific natural resources. Key issues are definitions of sustainability, the substitution capability between human-made and natural capital, and the appropriate application of economics to sustainable development analysis and policies.

#### REM 625-5 Risk Assessment and Decision Analysis for Management of Natural Resources

Use of quantitative methods of risk assessment and decision analysis to explicitly take uncertainty into account when making decisions in management of natural resources. Methods of quantifying uncertainty and the resulting risks. Examples from management of forests, wildlife, fisheries, water resources, energy, and toxic chemicals. Communicating information about uncertainties and the resulting risks to resource managers, the public, and scientists. Advantages and limitations of various quantitative methods. Includes computer laboratories. Prerequisite: permission of instructor.

#### REM 631-5 Earth Systems and Global Change in Environmental Management

Reviews how human and natural processes across earth systems and over a range of scales interact to affect the hydrological cycle, climate, and land surface processes that are relevant to resource management.

#### REM 632-5 Terrain Evaluation

The extensive classification of a landscape based on geology, geomorphology, soils, vegetation, historic and current land use, and the assessment of qualitative values as an aid to multiple land use management.

#### REM 633-5 Introduction to Remote Sensing and Aerial Photographic Interpretation

The application of these techniques in the acquisition and display of selected resource data. Topics include air photo interpretation, multi-band photography, thermal infrared imagery, satellite imagery, orthophotography, topographic and thematic mapping, and computer cartography.

#### REM 636-5 Applications of GIS in Resource and Environmental Management

For students to understand the “general principles, opportunities, and pitfalls of recording, collecting, storing, retrieving, analyzing, and presenting spatial information” as it pertains to resource and environmental management.

#### REM 641-5 Law and Resources

A study of legal interventions related to resource planning and environmental control. The course looks at several aspects of environmental and recourse law including administrative and constitutional law, fisheries and forestry regulation, and native rights.

#### REM 642-5 Regional Planning I

Theory and techniques of regional analysis; planning models and their application to key resource sectors.

#### REM 643-5 Environmental Conflict and Dispute Resolution

This course examines theoretical aspects of conflict and dispute resolution in natural resource management settings and is designed to assist students in understanding the nature of environmental conflict and the role of environmental dispute resolution (EDR) techniques.

#### REM 644-5 Public Policy Analysis and Administration

Analysis of methods of policy-making and problem solving with particular emphasis on natural resource issues. Topics include goal setting, problem definition, program scheduling, policy evaluation, policy implementation and public administration. A practical analysis of the structure and processes surrounding major contemporary policy issues.

#### REM 645-5 Resource Development Communities

Examination of the impact of resource developments on communities in Canada. An overview of the social organization of resources-based communities and an analysis of the participatory process in decision making in resource management.

#### REM 646-5 Environmental and Social Impact Assessment and Environmental Management Systems

Evaluation and application of current methodologies for social, economic, and biophysical impact assessment and the ISO 14001 standard for environmental management systems.

#### REM 647-5 Parks and Outdoor Recreation Planning

The course examines a combination of both ecological and market-based resource assessment and planning techniques for conservation and use of parks, forests, and protected areas. Visitor behavior and management in recreation and protected areas settings will be examined.

#### REM 648-5 The Tourism System

This course will examine the social, environmental and economic components of tourism. Topics will include theoretical concepts and elements of tourism, historical evolution, spatial patterns, and case studies of tourism development in various parts of the world. Discussion of tourism planning and management will focus on the development of tourism as a renewable resource.

#### REM 649-5 Tourism Planning and Policy

The course provides frameworks and methodologies for understanding the policy and planning initiatives of public and private sector organizations. Foundations for resource assessment, market analysis, product-market matching and regional tourism strategy development are explored in detail. Prerequisite: permission of instructor.

#### REM 650-5 Energy and Materials Management and Policy

Management strategies and policies to achieve sustainable flows of energy and materials in the economy. Eco-efficiency strategies reduce these flows while resource substitution strategies seek more environmentally benign flows. Applies expertise from economics, ecology, thermodynamics, engineering, geology and behavioral sciences.

#### REM 651-5 Project Evaluation and Non-market Valuation Methods

This course extends environmental and ecological economics concepts to the field of project appraisal and non-market valuation. Includes the methods and limitations of standard cost-benefit analysis (CBA), as well as new techniques in the valuation of non-market environmental resources and ways to incorporate considerations such as the depletion of natural resources in project work. The course concludes with treatment of a number of alternatives to CBA, including multi-attribute techniques and the precautionary principle. Prerequisite: ECON 200, REM 621, or permission of instructor.

#### REM 652-5 Community Tourism Planning and Development

The course critically examines approaches employed by communities incorporating tourism into their development strategies. Techniques for optimizing the

resource potential of communities from economic, social, cultural and environmental perspectives are explored with a view toward developing policies for ‘appropriate’ community tourism. Prerequisite: permission of instructor.

#### REM 655-5 Water Planning and Management

Evaluation of theoretical models and management experiences; federal, provincial and international institutional arrangements and jurisdictional responsibilities; emerging problems and opportunities. This is primarily a field course in which water and environmental management systems in British Columbia are compared with those in the states of Washington, Oregon, and California.

#### REM 656-5 Environment and Development

Introduces students to issues of environmental resource use in developing countries. Covers environmental issues in development, integrated conservation and development projects, community-based resource management, and global and ecological economics perspectives. Includes a one-week field trip to Baja, Mexico.

#### REM 658-5 Energy and Materials Systems Modeling

Theory, background, and practical experience in the use of a range of techniques for policy modelling of energy and materials flows in society with the aim of demonstrating how more environmentally and socially sustainable trajectories can be achieved. Techniques include: simulation modelling, optimization modelling, econometric and other forms of parameter estimation, input-output modelling, game playing models, and integrated systems models. Prerequisite: permission of instructor.

#### REM 660-5 Special Topics in Natural Resources Management

Special topics in areas not currently offered within the offerings of the resource and environmental management program

#### REM 661-5 Special Topics in Resources Management

Special Topics in areas not currently offered within the offerings of the resource and environmental management program.

#### REM 662-663-5 Special Topics in Resource Management

Special topics in areas not currently offered within the offerings of the resource and environmental management program.

#### REM 664-5 Directed Studies

Special topics in areas not currently offered within the offerings of the resource and environmental management program.

#### REM 667-668-3 Special Topics

Special Topics in areas not currently offered within the offerings of the resource and environmental management program.

#### REM 670-5 Introduction to Forestry

Examines the theory and practice of forest management based on an understanding of the linkages between forest ecosystem dynamics, economics, policy and social management. Principles are illustrated with reference to contemporary forestry issues. Prerequisite: REM 611 or permission of instructor.

#### REM 671-5 Forest Ecology

Structure, function and development of forest ecosystems. Population, community, ecosystem and landscape approaches are used to enable students to understand the biology and management of forests in terms of the processes driving spatial and temporal dynamics.

#### REM 672-5 Silviculture

Principles and practice of silviculture; lecture and laboratory, with added emphasis on the state of the



art in British Columbia. Prerequisite: REM 671, equivalent course, or permission of instructor.

#### **REM 690-0 Practicum I**

First term of work experience in the School of Resource and Environmental Management's Co-operative Education Program.

#### **REM 691-0 Practicum II**

Second term of work experience in the School of Resource and Environmental Management's Co-operative Education Program. Prerequisite: students must have completed at least one term's courses and permission of REM's co-op co-ordinator.

#### **REM 698-3 Field Resource Management Workshop**

An intensive field course introducing students to the diversity of issues and viewpoints concerning management of natural resources. Problem areas will include forestry, mining, fisheries and wildlife management, energy, recreation and land use planning.

#### **REM 699-10 Research Project**

A research project dealing with a specific interdisciplinary problem in resource management, administration or allocation. The study must result in the preparation of a formal paper and the presentation of a seminar.

#### **REM 801-5 Principles of Research Methods**

Students will develop skills and insight into the design, implementation and analysis of interdisciplinary research in natural resource and environmental management. This will help prepare students to carry out their own research projects. Students who entered REM during or prior to the Fall 1994 term and who have received credit for any one of MRM 601, 611 or 621 may not take REM 801 for credit.

#### **REM 802-5 Research Approaches for REM PhD Students**

This course is designed for all REM PhD students, although considerable course material may be of interest and value to other REM students. The course will emphasize preparing PhD students for their breadth comprehensive exams by discussing and evaluating various viewpoints in published debates related to the three topic areas of comprehensive exams: resource and environmental economics, policy and planning and environmental science. The course will also cover planning and carrying out the PhD research, as well as effectively communicating research results.

#### **REM 899-10 PhD Thesis**

### **Science SCI Faculty of Science**

#### **SCI 300-3 Science and its Impact on Society**

The impact of science in our society. This course introduces upper level university students to all facets of science and their resulting technologies. Governmental policies often involve far-reaching scientific/technological decisions and this course attempts to provide a scientific perspective to help achieve rational and effective policies. Prerequisite: 60 units. Not open to students in the Faculty of Science or the Schools of Computing Science, Engineering Science and Kinesiology. Breadth-Science.

### **Sociology and Anthropology SA Faculty of Arts and Social Sciences**

#### **SA 100W-4 Perspectives on Canadian Society (S or A)**

An examination of Canadian society from the perspective of the social sciences -- an introduction both to the nature of Canadian society and to the use of sociological and anthropological concepts applied to the analysis of modern societies in general. This course is meant to appeal to those who specifically wish to expand their knowledge of Canadian Society, and also to those who may be considering further work in sociology and anthropology. Topics to be considered include class structure, the nature of Canada's population, regional variation, gender relations, multiculturalism, native issues. Writing/Breadth-Social Sciences.

#### **SA 101-4 Introduction to Anthropology (A)**

An introduction to the study of human social and cultural life from an anthropological perspective. The course will explore the scope and nature of the discipline of anthropology through study of selected cases drawn from both technologically simple communities and complex modern industrial societies. Students with credit for SA 170 may not take SA 101 for further credit. Breadth-Social Sciences.

#### **SA 141-3 Sociology and Anthropology Practicum I**

This is the first term of work experience in the Co-operative Education Program in sociology and anthropology. It is meant to be exploratory in nature. Units from this course do not count towards the units required for an SFU degree. Prerequisite: 29 units with a minimum cumulative GPA of 2.75 including SA 101 or 150 and SA 255. Students should apply to the Faculty of Arts co-op co-ordinator by the end of the third week of the term preceding the employment term.

#### **SA 150-4 Introduction to Sociology (S)**

The study of basic concerns of sociology, such as social order, social change, social conflict and social inequality. Breadth-Social Sciences.

#### **SA 201W-4 Anthropology and Contemporary Life (A)**

An introduction to the anthropological perspective as applied to the organization of everyday life in contemporary settings. Introduces positivist, interpretive, and critical interpretive approaches to the analysis of social actions, identities, and values as enacted in space and time. Students with credit for SA 291 may not take SA 201W for further credit. Recommended: SA 101. Writing.

#### **SA 203-4 Violence in War and Peace (S or A)**

A critical examination of the relationship between violence and structural inequalities. Focus will be on different forms that violence assumes in war and peace and how acts of violence are remembered, collectively denied or misrecognized. Particular case studies may include colonization of indigenous people, Holocaust, South African Apartheid, India's Partition, the genocide in Rwanda, the Israeli-Palestinian conflict, 9/11 and its aftermath along with everyday suffering, including gender violence. As well, special attention will be given to anthropological witnessing. Prerequisite: SA 101 or 150 or 201.

#### **SA 210-4 Introduction to Power and Regulation of Self and Others (S)**

Surveys the field of social and moral regulation of human subjects in both historical and contemporary contexts. It canvasses the wide range of ideas, policies and methods that have characterized state and civil projects aimed at imposing social order

through systems of law, politics, education, health, welfare, labour, religion, family, media, and other key social institutions. Students will learn about the profound impact of civil and state regulation projects in their many forms on societies past and present, and about the rich diversity of institutional, cultural and human experience that these social ordering ideologies, policies and practices encompass. Prerequisite: SA 101 or 150 or 201.

#### **SA 218-4 Illness, Culture and Society (S or A)**

The study of socio-cultural factors related to health and illness. Focus will be on patterns of health seeking activity, systems of health care, causal and symbolic factors involved in physical and mental illness, and the medicalization of life in contemporary society. The disciplinary focus of the course will vary from semester to semester. Prerequisite: SA 101 or 150 or 201. Students with credit SA 460 when offered as Medical Anthropology may not take SA 218 for further credit.

#### **SA 231-4 Sociology of Families (S)**

An examination of families and households in social, cultural, political and economic context. This course focuses on the diversity of family forms in contemporary societies (particularly Canada) in relation to various social institutions and processes, including demographic trends, ideology, gender inequality, the economy, the state and social policies. Prerequisite: SA 101 or 150 or 201.

#### **SA 241-3 Sociology and Anthropology Practicum II**

This is the second term of work experience in the Co-operative Education Program in sociology and anthropology. Building on the experiences of the first employment term, this term will provide a work experience that integrates theory and practice of the social sciences. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of SA 141 and normally the completion of at least 45 units with a minimum cumulative GPA of 2.75. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the term preceding the employment term.

#### **SA 245-4 Cultures and Images (A)**

This course introduces students to the principles and practices of visual anthropology through exploring the creation, circulation, and consumption of images among and between members of diverse cultures in the contemporary world. Topics to be covered include the use of photographs, film and video as a tool in ethnographic research; the use and implications of new information technologies; the 'reading' of photographs, film and video from an anthropological perspective; the emergence and development of non-Western visual media. Prerequisite: SA 101 or 150 or 201.

#### **SA 250-4 Introduction to Sociological Theory (S)**

An account of sociological theory, outlining the main ideas and concepts of the principal schools of thought. Prerequisite: SA 150.

#### **SA 255-4 Introduction to Social Research (S or A)**

An introduction to the conduct of sociological and anthropological research. Topics covered include: the relationship between theory and research, concept formation, operationalization, exploratory studies, hypothesis generation and testing, data collection techniques within both sociology and anthropology, the assessment of causality, the critical evaluation of research on both theoretical and methodological grounds, the definition of research problems, and ethical issues in social research. Prerequisite: SA 101 or 150. Quantitative.

**SA 260-4 Individual and Society (S)**

An examination of how self and identity (e.g. race, class, gender, sexual orientation) are socially derived within contemporary western culture, and of the ways that individuals shape their social environment. Prerequisite: SA 101 or 150 or 201.

**SA 275-4 China in Transition (S or A)**

An introduction to culture, social structure and the processes of social, economic, and political transformation in contemporary China. Topics may include recent development of Marxism, feminism and neoliberalism in China; Western debates on China's rise and images of China as threat; human rights. Prerequisite: SA 101 or 150.

**SA 286-4 Aboriginal Peoples and British Columbia: Introduction (A)**

Investigates contemporary social organization, cultural expression, and political representation among Aboriginal peoples in the province of British Columbia within an ethnohistorical framework. Topics may include: land rights, law, gender relations, inter-cultural relations; policy studies in education, health, justice, social and economic development; indigenous knowledge; Aboriginal art, media and performance. Emphasis may differ from term to term. Students with credit for SA 140 may not take SA 286 for further credit. Recommended: SA 101.

**SA 300-4 Canadian Social Structure (S)**

An analysis of the social institutions and structure of Canadian society. The focus of the course will vary from semester to semester, but typically it will examine different theoretical approaches to the study of Canada and, from these, develop a framework for the analysis of Canadian social institutions and class structure. Prerequisite: SA 101 or 150 or 201.

**SA 301-4 Contemporary Ethnography (A)**

A consideration of key themes in contemporary anthropology. This course addresses theoretical and methodological questions by examining the work of contemporary anthropologists conducting research in diverse locations around the world. Prerequisite: SA 201. Students with credit for SA 370 may not take SA 301 for further credit.

**SA 302W-4 Global Problems and the Culture of Capitalism (S or A)**

An introduction to the political economy and culture of capitalism in relation to global problems. Case studies may focus on issues of population, famine, disease, poverty, environmental destruction, social inequality, and nation-state violence. Resistance, rebellion and social movements in response to these problems also will be addressed. Highly Recommended: SA 101 or SA 150. Students who took SA 294 in 03-1, 04-1 and 04-2 may not take SA 302 for further credit. Writing/Breadth-Social Sciences.

**SA 304-4 Social Control (S)**

This course examines how the organization of control (formal and informal) affects both individuals and society. It will investigate how control takes form, how it functions, the ideologies supporting it, and the resistance it produces. We will ask the following questions: who are the agents of social control; who or what do they control; and how do they control? Prerequisite: SA 101 or 150 or 201.

**SA 315-4 New Information Technology and Society (S or A)**

Explores the new social spaces and social practices fostered by new information technology. Special attention will be paid to who is making decisions about what technologies to adopt and how, what social changes are resulting, and who benefits and who loses. A significant portion of activity in this course will involve direct engagement with new information technology. Recommended: SA 150.

**SA 316-4 Tourism and Social Policy (S or A)**

An examination of tourism from the perspectives of sociology and anthropology, focusing primarily upon the social and cultural impacts of tourism and the social policy implications of tourism development in different societies. Prerequisite: SA 101 or 150 or 201.

**SA 318-4 The Anthropology of Medicine (A)**

Explores the role of biomedicine in society and culture through inquiry into the social and ideological organization of health and healing. Special attention will be paid to how biomedical categories structure experiences of the body, how means of life and death are shaped through medical interventions, and how social relations organize the delivery of biomedical technologies. Prerequisite: SA 101 or 150 or 201.

**SA 319-4 Culture, Ethnicity and Aging (A)**

An examination of the effects of culture and ethnicity on the aging process and the treatment of the aged. Although the orientation of the course is cross-cultural and comparative, particular emphasis will be placed on the social aspects of aging among various ethnic groups in contemporary Canada. Prerequisite: SA 101 or 150 or 201 or acceptance into the gerontology diploma program.

**SA 321-4 Social Movements (S)**

A study of the sources, development and effects of social movements in transitional and modernized societies. Specific types of movements will be analysed. Prerequisite: SA 101 or 150 or 201.

**SA 322-4 Sociology of Religion (S)**

An examination of the development and social impact of religious institutions in modern industrial societies. Consideration will be given to the classical theoretical approaches to the sociology of religion, and further topics which may be considered include: denominational religion in Britain and North America; the secularization thesis; the relationship between science and religion, and the organization, structure and social appeal of sectarian groups in contemporary society. Prerequisite: SA 101 or 150 or 201.

**SA 323-4 Symbol, Myth and Meaning (A)**

An examination of myth, symbolism, ritual and cosmological systems. Anthropological theories of magic, possession, witchcraft, healing and religious movements analyzed in ethnographic context. Prerequisite: SA 101 or 150 or 201.

**SA 325-4 Political Sociology (S)**

An examination of the relations of power and authority. This course will analyze the interrelations of family, church, class, interest groups, etc., particularly as they influence and are influenced by the state. The relations of law and ideology to the structures of government will form the context for this analysis. The course may also focus on broad theoretical questions of contemporary political interest. Prerequisite: SA 101 or 150 or 201.

**SA 326-4 Ecology and Social Thought (S or A)**

An examination of recent social thought that is concerned with environmental and ecological themes. It will address a selection from the following themes: technology evaluation; technology and science as ideology; ecology and social inequality; the concepts of ecosystem, environment and wilderness; the self-world relationship; politics of environmental uses; environment and the economy. The disciplinary designation will change to reflect specific topics and whether sociology or anthropology designation: refer to each term's course outline or department advisor. Prerequisite: SA 101 or 150 or 201.

**SA 327-4 Sociology of Knowledge (S)**

An examination of sociological theories concerning the interaction of social structures, and meaning and belief systems. Prerequisite: SA 101 or 150 or 201.

**SA 331-4 Politics of the Family (S)**

A sociological examination of the contested nature of contemporary domestic and intimate relations. The course will focus on debates arising from equality movement politics (e.g. gender, sexuality, race). Prerequisite: SA 101 or 150 or 201.

**SA 332-4 The Anthropology of Childhood (A)**

A cross-cultural examination of the social and cultural relations that shape childhood in different settings. Topics to be considered could include: the social definition of childhood and child rearing; the institutional arrangements established for children and youth and the impact that these have on children, families, and society; the social construction of child and youth cultures. Prerequisite: SA 101 or 201.

**SA 333-4 Schooling and Society (S)**

A sociological analysis of the nature of the education system and its relationship to major social institutions in Western industrial societies, in particular Canada. Aspects studied may include: the classroom, teachers, student culture, bureaucratization, inequality (e.g. gender), employment, and social policy. Prerequisite: SA 101 or 150 or 201.

**SA 335-4 Gender Relations and Social Issues (S)**

A sociological study of the position of women and men in major social institutions in western industrial societies, in particular Canada. Social institutions that may be examined include: the family, education, the economy, the polity, law, and the mass media. Particular attention will be paid to social policy issues. Prerequisite: SA 101 or 150 or 201. Students with credit for SA 292 (when offered as gender relations) or WS 308 may not take SA 335 for further credit.

**SA 337-4 Sexuality and Society (S)**

The categories that organize our understandings of sex, gender and sexuality have powerful histories and roles in organizing social relations in western society. Social activists and academics contest the naturalness of these categories, particularly that of the binary opposition between male and female, and related assumptions about sexuality and sexual orientation. This course encompasses a range of perspectives on sex/gender identity, sexuality, and the relationship between the two. These perspectives include feminist, lesbian and gay, and queer and transgender challenges to traditional understandings of sex/gender identity and sexuality. Prerequisite: SA 101 or 150 or 201.

**SA 340-4 Social Issues and Social Policy Analysis (S or A)**

An examination of how sociological and anthropological theories and methods can be applied to the examination of social problems and issues which become the object of social policy. A central concern of the course is the question of how social issues are defined as problematic. Particular attention will be given to gender, ethnicity, class and generation. Substantive examples of social policy issues will be selected from a number of fields. Prerequisite: SA 101 or 150 or 201.

**SA 341-3 Sociology and Anthropology Practicum III**

This is the third term of work experience in the Co-operative Education Program in sociology and anthropology. The work experience will be focused in a specialized area of the student's choice. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of SA 241 and normally the completion of at least 61 units with a minimum cumulative GPA of 2.75. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the term preceding the employment term.

**SA 345-4 Race, Immigration and the Canadian State (S or A)**

An introduction to critical perspectives on the social construction of race, nation building and transnational migration, with an emphasis on state policies and the experiences of immigrants. The course will cover a review of colonialism and the construction of racialized labor market. Core topics may include: racialization of space, anti-racist feminist thought, immigration policy, settlement services, multiculturalism, citizenship, racial profiling, diasporas, and refugees. Comparative material will be used to complement the Canadian focus. The disciplinary designation will change to reflect specific topics and whether sociology or anthropology designation: refer to each term's course outline or department advisor. Prerequisite: SA 101 or 150 or 201.

**SA 350-4 Classical Sociological Thought (S)**

An examination of aspects of the work of one or more of the nineteenth or early twentieth century sociological theorists. Prerequisite: SA 250.

**SA 351-4 Classical Marxist Thought (S)**

A detailed study of classical Marxist social thought. Prerequisite: SA 250.

**SA 352-4 Games, Sports and Cultures (A)**

An anthropological examination of games and sports in cross-cultural perspective. Particular attention will be given to the social construction of games and athletic activities as well as the cultural, political and aesthetic meanings attached to these. Topics that may be examined include: the embodiment of culture in sporting activities; the impact of inter-cultural contact and globalization on games and sport; the shaping of gender, class and ethnic identities through sport involvement; appropriate methodologies for producing sport ethnographies. Prerequisite: SA 101 or 201.

**SA 353-4 Sociology of Sport (S)**

A sociological examination of sport focuses on the role of this important set of institutions and activities in shaping social relations and understandings about difference and identity. Sport has a long history of naturalizing racial and gender differences in such a way as to reinforce and reflect social inequality more broadly. Racial segregation in sport (at least in formal legal terms) is no longer considered acceptable in western societies or in the Olympic movement at the global level. But the power of sport in reinforcing and naturalizing racial inequality continues while the naturalness and inevitability of sex segregation in sport remains largely unchallenged. This course will explore the relationships between sport and social inequality, sport and nationalism, and sport and the economy. Prerequisite: minimum of 30 units including SA 150. Students who took SA 216 or SA 315 (when offered as Society of Leisure) may not take SA 353 for further credit.

**SA 355-4 Quantitative Methods (S or A)**

An examination of measurement issues within sociological and anthropological research, focusing on the logical and conceptual construction and interpretation of tables, and an examination of the uses and abuses of statistics. Through an introduction to 'hands on' use of the computer, this course emphasizes the applications, rather than the mathematics, of statistics. Prerequisite: STAT 203 or equivalent and SA 255. Students with credit for SA 355 may not take POL 315 for further credit. Quantitative.

**SA 356W-4 Ethnography and Qualitative Methods (S or A)**

An examination of qualitative field methods, including participant observation, interviewing, archival research, cross-cultural research, life histories, network analysis, mapping, and ethical problems of fieldwork. Prerequisite: SA 255. Writing.

**SA 357W-4 Survey Methods (S or A)**

Students will formulate a research problem suited to a quasi-experimental (survey) design, and perform all the research steps needed for its completion. Prerequisite: SA 255. Recommend: SA 355. Writing/Quantitative.

**SA 358-4 The Philosophy of the Social Sciences (S or A)**

An analysis of the nature of explanation in the social sciences: 'mind' and action, positivist and interpretive modes of explanation, sociological and historical explanation, objectivity, forms of relativism, the concept of rationality. Prerequisite: SA 101 or 150 or 201.

**SA 360-4 Special Topics in Sociology and Anthropology (S or A)**

A seminar exploring a topic not regularly offered by the department. The disciplinary designation will change to reflect specific topics and whether sociology or anthropology designation: refer to each term's course outline or department advisor. Prerequisite: SA 101 or 150 or 201.

**SA 362-4 Society and the Changing Global Division of Labor (S)**

An examination of the social and political implications of the global economy. Topics to be considered include the influence of neo-liberal economics, the decline of the national welfare state, transnational political agencies and public policy, the internationalization of culture, the global labor market, the 'world city' hypothesis, ethnic resurgence and alternatives to these developments. Prerequisite: SA 101 or 150 or 201.

**SA 363-4 Process of Development and Underdevelopment (S or A)**

An examination of sociological and anthropological theories of development and underdevelopment as applied to the Third World. The nature and consequences of world system linkages; colonialism and decolonization; patterns of social change in selected societies and regions. The disciplinary designation will change to reflect specific topics and whether sociology or anthropology designation: refer to each term's course outline or department advisor. Prerequisite: SA 101 or 150 or 201.

**SA 364-4 Urban Communities and Cultures (S or A)**

Anthropological approaches to urbanization, the nature of the city as a social system, and urban cultures and lifestyles. Prerequisite: SA 101 or 150 or 201. Students with credit for SA 464 may not take SA 364 for further credit.

**SA 365-4 Selected Regional Areas (A)**

An examination of selected aspects of the social structure, culture and the processes of social change in varying regional areas. The focus will vary from semester to semester. Prerequisite: SA 101 or 150 or 201.

**SA 368-4 Language, Ideology, and Power (A)**

Examines how language shapes and is shaped by culture, power, and social relations and introduces the major concepts, approaches, and theories used by anthropologists in the investigation of relations between language and cultural forms. Prerequisite: SA 101, 201, or 150.

**SA 371-4 The Environment and Society (S or A)**

An examination of environmental issues in their social context. Environmental issues are on the leading edge of contemporary public concern and public policy debates. This course will examine such issues as the relationship between social organization and mode of subsistence, the politics of hunger, and the way in which human societies in their particular social, historical, and cultural contexts view and interact with the natural world. The disciplinary

designation will change from term to term to reflect specific topics and whether sociology or anthropology designation: refer to each term's course outline or department advisor. Prerequisite: SA 101 or 150 or 201.

**SA 386-4 The Ethnography of Politics (S or A)**

An examination of the ways in which ethnographers seek to understand a world experiencing profound changes in the relationships between governments and the societies they govern. Topics to be considered may include: relations between indigenous peoples and governments; the social and cultural dynamics of public policy making; the articulation of human rights issues. The focus of the course will vary from semester to semester. Prerequisite: SA 101 or 150 or 201.

**SA 388-4 Comparative Studies of Minority Indigenous Peoples (S or A)**

The social and cultural patterns of aboriginal populations within various modern nation-states. Their relations with majority societies and with other indigenous groups across the world. The disciplinary designation will change from term to term to reflect specific topics and whether sociology or anthropology designation: refer to each term's course outline or department advisor. Prerequisite: SA 101 or 150 or 201.

**SA 392-4 Latin America (S or A)**

An introduction to the peoples and institutions of Latin America in historical and contemporary perspective, emphasizing macro-level patterns of similarity and diversity. Prerequisite: SA 101 or 150 or 201. Students with credit for SA 391 may not take this course for further credit. This course is identical to LAS 392 and students cannot take both courses for credit.

**SA 396-4 Selected Regional Areas (S or A)**

An examination of selected aspects of social structure, culture and processes of social change in a specific regional area. The focus will vary from term to term. The disciplinary designation will change from term to term to reflect specific topics and whether sociology or anthropology designation: refer to each term's course outline or department advisor. Prerequisite: SA 101 or 150 or 201.

**SA 401-4 The Politics of Culture in Contemporary Societies (A)**

Anthropological explorations of the relationship between political, cultural, and social processes in contemporary societies. Topics may include: social organization and symbolic systems; the use of political rhetoric and symbolism; the mobilization of social, cultural and political constituencies; the articulation of political processes between local, national, and international levels. Prerequisite: minimum of 72 units including SA 101 or 150 or 201. Recommended: SA 356.

**SA 402-4 The Practice of Anthropology (A)**

An examination of the ways in which anthropology and ethnography may be used to affect action in the world. Topics may include: advocacy anthropology; the development and practice of applied anthropology; the emergence of anthropology and ethnography and the arts. Prerequisite: minimum of 72 units including SA 101 or 150 or 201. Recommended: at least two upper division courses in anthropology.

**SA 403-4 Selected Topics in Latin American Economy and Society (LAS)**

This seminar will be taught co-operatively by LAS associated faculty or by a visiting professor. A topic will be chosen which can be examined profitably from a multidisciplinary perspective. Prerequisite: minimum of 72 units including LAS 200, or consent of instructor. Students who have taken LAS 403 cannot take this course for further credit.

**SA 410-4 Advanced Topics in Power and the Regulation of Self and Others (S)**

Offers specialized instruction on advanced topics pertaining to the social and moral regulation of human subjects in both historical and contemporary contexts. It explores the ideologies, policies and practices of regulation and governance in application to selected social contexts and subjects including, but not confined to, welfare, justice, medicine, the 'psy' sciences, immigration, labour, sexuality, pornography, racialization, gender and family. Students will acquire specialized knowledge about the profound impact of civil and state regulation projects on societies past and present, and about the rich diversity of institutional, cultural and human experience that these social ordering ideologies, policies and practices encompass. Prerequisite: minimum of 72 units including, either SA 101 or 150, and SA 210.

**SA 416-4 Sociology of Art Forms (S)**

This course may focus variously on one or all of the following: the social origins and functions of art, sociological theories of aesthetics, and contemporary issues in art, such as the fate of art in modern society, popular culture, mass media, ideology in art. Prerequisite: minimum of 72 units including SA 101 or 150 or 201.

**SA 417-4 Contemporary Issues in Medical Sociology (S)**

An examination of sociological approaches to the study of health and health care, emphasizing the connections between social theory and empirical data. Topics may include: the social determinants of health, health inequities, the structure and reform of health care systems, and the application of human rights frameworks to the study of health. Prerequisite: minimum of 72 units which must include SA 255, or must have graduate student status in the Faculty of Health Sciences. Students who have taken SA 360 Special Topics: Medical Sociology in 2006-3 may not take this course for further credit.

**SA 418-4 International Health: Global Policies and Local Realities (S or A)**

An investigation of the social, cultural, and political issues that contribute to problems of ill-health in resource-poor countries and the major efforts in international public health to address these problems. It explores the application of knowledge about social, and especially gender relations in international health, with particular attention to local perspectives and grassroots initiatives. Institutional frameworks intended to promote health development are examined in historical and contemporary perspective through case studies on topics such as: malaria, population control, maternal health, HIV/AIDS, and tuberculosis. Prerequisite: minimum of 72 units, including SA 101 or 150 or 201, or must have graduate student status in the Faculty of Health Sciences. Highly recommended: SA 218, 302 and 318. Breadth-Social Sciences.

**SA 420-4 Sociology of Aging (S or A)**

The structural and behavioral implications of aging. Topics included will be: demographic aspects of aging; the relationship of aging to political, economic, familial and other social institutions; the psychological significance of aging. Prerequisite: minimum of 72 units including SA 101 or 150 or SA 201, or acceptance into the diploma program in gerontology, or by consent of instructor. This course is identical to GERO 420 and students cannot take both courses for credit. Students may use GERO 420 to fulfil their major or minor requirements in lieu of SA 420.

**SA 421-4 Commodities and Substances: Bodies, Consumption and Ingestion (A)**

Addresses current theoretical and methodological approaches to the anthropological study of consumption and ingestion of diverse substances. Topics include historical perspectives on production,

distribution and consumption; power and meaning; inequality and governance of legal and illegal drugs, drug foods, medicines and diverse populations of consumers and ingesters. Prerequisite: minimum of 72 units including SA 101 or 150 or 201, or graduate student status in Faculty of Arts and Social Sciences or Faculty of Health Sciences. Students who have taken SA 460 in 04-1 and 05-1 may not take this course for further credit.

**SA 429-4 Sex, Work, and International Capital (S or A)**

Through a program of focused readings, films, and case studies, this course examines the experiences of women in the Third World in relation to the global economy and reorganization of states and cultures. The course challenges conventional ways of thinking about everyday life in households and workplaces, and emphasizes that issues which may seem specifically third World-based are shared by many around the world. An awareness of this commonality helps us assess the balance of structural constraints and opportunities, and stimulates a discussion on the organization of alternative ways of living. Prerequisite: minimum of 72 units including SA 101 or 150 or 201. Students who took SA 463 in 2003-1, SA 460 in 2003-3, and SA 360 in 2004-3 may not take this course for further credit.

**SA 430-4 States, Cultures and Global Transitions (S or A)**

Through a program of focused readings, case studies, and films, this course offers a new perspective on the study of globalization. It balances classical themes with contemporary approaches to global processes of economic, political, and cultural transformation. The course tackles such topics as the material aspects of cooperation and coercion, class relations in structures of capital accumulation and global governance, and cultural dynamics. Alternatives to Euro-American centrism are explored through the examples of citizenship, cultural politics, ethnic and religious conflicts, human rights, indigenous rights, and women's rights. Prerequisite: minimum of 72 units including SA 101 or 150 or 201. Highly recommended: SA 302. Students who took SA 463 in 2004-3 may not take this course for further credit.

**SA 441-3 Sociology and Anthropology Practicum IV**

This is the last term of work experience in the Co-operative Education Program in sociology and anthropology. The work experience will require a high level of expertise in both theoretical conceptions and practical endeavors. Units from this course do not count towards the units required for an SFU degree. Prerequisite: successful completion of SA 341 and normally the completion of at least 77 units with a minimum cumulative GPA of 2.75. Students should apply to the Faculty of Arts and Social Sciences co-op co-ordinator by the end of the third week of the term preceding the employment term.

**SA 447-4 Selected Issues in Social Policy Analysis (S or A)**

An advanced seminar devoted to an in-depth examination of an issue or topic in the field of social policy analysis which is not regularly offered by the department. Prerequisite: minimum of 72 units including SA 101 or 150 or 201. Recommended: SA 340.

**SA 450-4 Advanced Sociological Theory (S)**

A senior seminar on current perspectives in sociological theory. Emphasis will differ from semester to semester. Prerequisite: minimum of 72 units including SA 350, a GPA of at least 3.25 and consent of the instructor.

**SA 451-4 Issues in Anthropological Theory (A)**

A senior seminar on current perspectives in anthropological theory. Emphasis will differ from

semester to semester. Prerequisite: minimum of 72 units including SA 301, a GPA of at least 3.25 and consent of the instructor.

**SA 455-4 Special Topics in Applied Social Research (S or A)**

An advanced seminar devoted to special topics in applied social research. The disciplinary designation will change from term to term to reflect specific topics and whether sociology or anthropology designation: refer to each term's course outline or department advisor. Prerequisite: minimum of 72 units including SA 301 or 350.

**SA 460-4 Special Topics in Sociology and Anthropology I (S or A)**

An advanced seminar devoted to an in-depth examination of a topic not regularly offered by the department. The disciplinary designation will change from term to term to reflect specific topics and whether sociology or anthropology designation: refer to each term's course outline or department advisor. Prerequisite: minimum of 72 units including SA 101 or 150 or 201. Recommended: at least two upper division courses in sociology and/or anthropology.

**SA 463-4 Special Topics in Development Studies (S or A)**

An examination of processes of social change in selected Third World societies. Topics will change from semester to semester, but may include: liberation movements and colonialism, the comparative study of post-revolutionary societies; the persistence, transformation and disappearance of contemporary pleasantries; directed change programs. The disciplinary designation will change from term to term to reflect specific topics and whether sociology or anthropology designation: refer to each term's course outline or department advisor. Prerequisite: minimum of 72 units including SA 101 or 150 or 201. Recommended: SA 363.

**SA 472-4 Anthropology and the Past (A)**

Anthropologists frequently turn to historical documents (traveller's reports, missionary archives, etc.) in order to reconstruct the nature of past societies; likewise, every society has a sense of its own past and represents it in its own way. This course examines the relation between history and anthropology. Content may include: the use of historical material in anthropological research; construction of traditional knowledge as a cultural process; history and the politics of culture; the relation between individual and collective memory. Prerequisite: minimum of 72 units including SA 101 or 150 or 201.

**SA 486-4 Aboriginal Peoples and British Columbia: Advanced Seminar (A)**

An opportunity for senior undergraduates to participate in a seminar concentrating on particular subjects of interest in the fields of social and cultural research among Aboriginal peoples in British Columbia. The course will focus on special topics that will differ from semester to semester. This may include: historical ethnography; policy issues and debates; economic and social development; political and legal relations; gender and generational relations; health and healing; ethnographic film; arts, literature and popular culture; cultural performance; oral tradition; exhibition and representation; cultural property. Prerequisite: minimum of 72 units including SA 101 or 150 or 201. Recommended: SA 286.

**SA 496-4 Directed Readings in Anthropology (A)**

Directed readings in a selected field of study under the direction of a single faculty member. A paper will be required. Prerequisite: minimum of 72 units including SA 101 or 150 or 201. Students with credit for SA 497 may not take SA 496 for further credit.

**SA 497-4 Directed Readings in Sociology (S)**

Directed readings in a selected field of study under the direction of a single faculty member. A paper will be required. Prerequisite: minimum of 72 units including SA 101 or 150 or 201. Students with credit for SA 496 may not take SA 497 for further credit.

**SA 498-8 Field Study in Sociology and/or Anthropology (S or A)**

Advanced field project in a research setting. Admission dependent on availability of appropriate field placements and departmental supervisory capacity. Prerequisite: completion of all major course requirements with the exception of SA 301 for anthropology majors and SA 350 for sociology majors, which may be taken concurrently, and by application.

**SA 499-4 Independent Project Option (S or A)**

An honors essay to be written under the direction of a member of faculty, a copy of which is to be permanently lodged with the department. Applications should be submitted to the Undergraduate Curriculum Committee 4 weeks prior to the beginning of the term in which SA 499 is to be undertaken. Students should submit a paper proposal, a work plan, and confirmation of faculty supervisor.

**SA 840-1 Graduate Seminar I**

Orientation to university, professional development, and cohort building. Required course for the first year MA and PhD students in Sociology and Anthropology.

**SA 841-1 Graduate Seminar II**

Presentations by faculty members, senior graduate students, and guest speakers. Required course for first year MA and PhD students in Sociology and Anthropology.

**SA 849-5 Selected Topics in the History of Sociological Thought**

Examines the classical tradition of sociological thought, represented in the writings of a range of early leading theorists such as Karl Marx, Max Weber, Emile Durkheim, Georg Simmel and/or George Herbert Mead. Will also include a review of the writings and influence of thinkers such as Montesquieu, Rousseau, Descartes, Spinoza, Bacon, Hobbes, and/or Locke. Required course for MA and PhD students in Sociology. Students from other departments and faculties may enrol with permission of instructor. Offered each fall term.

**SA 850-5 Selected Topics in Contemporary Social Theory**

Examines at least two perspectives from the body of social theory that has developed since World War II. Perspectives to be discussed may include but are not limited to: symbolic interactionism, feminism, structuralism, post-structuralism, post-marxism, post-modernism, post-colonialism, queer theory and neo-functionalism. Required course for MA and PhD students in Sociology. Students from other departments and faculties may enrol with permission of instructor. Offered each spring term. Prerequisite: SA 849 or permission of instructor.

**SA 853-5 Readings in Sociology I****SA 854-5 Readings in Sociology II****SA 855-5 Advanced Quantitative Methods in Sociology**

Examines the use of quantitative methods and statistical analysis in social research. Students will develop the knowledge base and skills necessary to understand and critically evaluate contemporary sociological literature that utilizes advanced quantitative methods. Lab sessions offer students the opportunity to apply a variety of statistical techniques. Prerequisite: An upper division undergraduate course in quantitative methods which covers statistical analysis (including probability and significance, hypothesis testing, and univariate and bivariate techniques), or permission of the instructor.

**SA 856-5 Qualitative Methodology**

Examines contemporary approaches to qualitative methodology in Sociology and Anthropology including epistemological and ethical debates surrounding the practice of qualitative methodology in diverse contexts. Students will investigate qualitative research methods applicable to their graduate research projects. Required course for MA and PhD students in Sociology and Anthropology. Students from other departments and faculties may enrol with permission of instructor. Offered each spring term.

**SA 857-5 Research Design Seminar**

Guides students through the process of designing a prospectus for MA or PhD thesis research. Required course for MA and PhD students in Sociology and Anthropology. Students from other departments and faculties may enrol with permission of instructor. Offered each summer term. Prerequisite: SA 856 or permission of instructor.

**SA 870-5 Contemporary Theory in Anthropology**

Examines the dynamic relationship among conceptual aims, social relations in research, and the socio-political contexts of anthropological work through close study of selected works in anthropology since 1970. Required course for MA and PhD students in Anthropology. Students from other departments and faculties may enrol with permission of instructor. Offered each fall term.

**SA 871-5 Readings in Anthropology I****SA 872-5 Readings in Anthropology II****SA 874-5 Historical Perspectives on Anthropological Theory**

Examines anthropology in its historical context. An examination of the political, cultural, and intellectual factors that shaped disciplinary discourse of a particular period, and continue to affect present practice. Emphasis may be on particular theorists, and/or particular schools of thought, and/or persistent guiding themes. The goal is to think about anthropology anthropologically, thus complementing the more contemporary focus of SA 870. Prerequisite: SA 870, or equivalent, or permission of instructor.

**SA 875-5 Ethnographic Methodology: Social/Cultural Anthropology**

In depth study of ethnographic methodology as practiced, theorized and debated by social and cultural anthropologists. Course will include anthropological analyses of multi- and interdisciplinary approaches to, and adaptations of, ethnographic methodology and methods. Elective course for MA and PhD students in Sociology and Anthropology. Students from other departments and faculties may enrol with permission of instructor. Course will be offered in response to student demand, dependent on availability of departmental resources.

**SA 886-5 Selected Problems in Social Analysis  
SA 890-0 Practicum I**

Prerequisite: completion of core MA degree requirements SA 850 or 870, and SA 857 plus one (thesis option) or two (extended essay or research project option) of the following: SA 863, 854, 871, 872 and 886 (or equivalent) with a minimum GPA of 3.0. The recommendation of the student's supervisory committee and the approval of the departmental graduate program committee also is required.

**SA 891-0 Practicum II**

Prerequisite: SA 890.

**SA 892-0 Practicum III**

Prerequisite: SA 891 and departmental approval.

**SA 896-6 MA Research**

Operationalizes thesis prospectus completed in SA 857. Prerequisite: All required and elective courses for MA degree except SA 898.

**SA 897-6 PhD Qualifying Examinations**

Course objective is to provide a framework and process for students and supervisors to work within to facilitate students' satisfactory preparation for qualifying examinations; and to complete qualifying examinations required for admission to doctoral candidate standing. Prerequisite: All PhD course requirements, with the exception of SA 857 must be completed before student may enrol in SA 897.

**SA 898-6 MA Thesis****SA 899-6 PhD Thesis**

## Spanish SPAN Faculty of Arts and Social Sciences

### Department of Linguistics Language Training Institute

**SPAN 102-3 Introductory Spanish I**

First half of first year Spanish. Emphasis on developing conversation and comprehension skills as well as understanding how Spanish grammar works. Students will learn typical daily vocabulary and are introduced to cultural aspects of the language. By the end of the term, students will have acquired basic conversational skills and an elementary reading facility.

**SPAN 103-3 Introductory Spanish II**

Second half of first year Spanish. As in SPAN 102, the emphasis is on oral skills and grammar while continuing to develop reading and writing proficiency. By the end of the term, students will be able to communicate in Spanish using a wide range of grammatical structures and vocabulary. SPAN 103 should be taken in the term immediately following SPAN 102. Prerequisite: SPAN 102, grade 12 Spanish, or equivalent.

**SPAN 201-3 Intermediate Spanish I**

First half of second year Spanish. Students will transfer their knowledge of the structure of Spanish into performance and use the language in an accurate and idiomatic way. The emphasis is on further development of all four skills: listening, speaking, reading, and writing. By the end of SPAN 201, students will be able to function in a Spanish-speaking environment. Prerequisite: SPAN 103 or equivalent.

**SPAN 202-3 Intermediate Spanish II**

Continues the work of SPAN 201 with emphasis on oral command and writing skills. Reading of selected texts will be introduced to expose the students to Hispanic culture. Prerequisite: SPAN 201.

**SPAN 204-3 Spanish Vocabulary**

Builds students' receptive and productive vocabulary to prepare them for intensive work in upper level Spanish courses. Prerequisite: SPAN 201 or equivalent.

**SPAN 301-3 Advanced Spanish Grammar and Writing**

Detailed examination of contemporary Spanish grammar. Appropriate grammatical usage is reinforced by exercises and writing assignments. Both advanced learners and native speakers will benefit through intensive work on a wide range of grammatical phenomena. Prerequisite: SPAN 202.

**SPAN 302-3 Spanish Conversation Through Cinema**

Enhances students' conversational skills through activities centred on Spanish language films. A selection of films from different parts of the Hispanic world will expose students not only to dialectal and register differences, but also to cultural practices in a variety of settings. Prerequisite: SPAN 202 or equivalent.

**SPAN 303-3 Spanish Composition, Translation and Conversation**

First half of third year Spanish. Conversation and composition with emphasis on correct spelling, sentence and paragraph structure. Prerequisite: SPAN 202 or equivalent.

**SPAN 304-3 Advanced Spanish Composition, Translation and Conversation**

Second half of third year Spanish. Continues the work of SPAN 303 with emphasis on style. Reading and analysis of selected texts will serve as the basis for further practice in oral and written expression. Prerequisite: SPAN 303 or equivalent.

**SPAN 305-3 Spanish for Business**

Provides more advanced students and professionals with the specialized technical Spanish vocabulary needed to function in the business world. Cultural aspects will also be stressed. Prerequisite: SPAN 202.

**SPAN 306-3 Spanish-English Translation**

Introduction to the theory and practice of translation. Literary and academic translations. Analysis of different translating strategies. Cultural and political issues in translation. Prerequisite: SPAN 202 or equivalent.

## Special Arrangements SAR

### Dean of Graduate Studies

**SAR 891-892-3 Special Topics**

To be selected by the student and supervisory committee.

**SAR 893-4 Special Topics**

To be selected by the student and supervisory committee.

**SAR 894-5 Special Topics**

To be selected by the student and supervisory committee.

**SAR 895-3 Special Topics**

To be selected by the student and the supervisory committee.

**SAR 896-6 Special Topics**

To be selected by the student and the supervisory committee.

**SAR 897-5 Special Topics**

To be selected by the student and the supervisory committee.

**SAR 898-6 Master's Thesis****SAR 899-6 PhD Thesis**

## Statistics STAT

### Faculty of Science

**STAT 100-3 Chance and Data Analysis**

Chance phenomena and data analysis are studied through simulation and examination of real world contexts including sports, investment, lotteries and environmental issues. Intended to be particularly accessible to students who are not specializing in Statistics. Students with credit for STAT 101, 201, 203, 270 or BUEC 232 will not receive additional credit for this course. Quantitative/Breadth-Science.

**STAT 101-3 Introduction to Statistics**

The collection, description, analysis and summary of data, including the concepts of frequency distribution, parameter estimation and hypothesis testing. To receive credit for both STAT 100 and STAT 101, STAT 100 must be taken first. Intended to be particularly accessible to students who are not specializing in Statistics. Students with credit for ARCH 376, BUEC 232 (formerly 332) or STAT 270 (formerly MATH 272 and 371) may not subsequently receive credit for STAT 101-3. Students with credit for STAT 102, 201, 203 (formerly STAT 103), 301, MATH 101 or 102 may not take STAT 101 for further credit. Quantitative.

**STAT 201-3 Statistics for the Life Sciences**

Research methodology and associated statistical analysis techniques for students with training in the life sciences. Intended to be particularly accessible to students who are not specializing in Statistics. Prerequisite: 30 units. Students with credit for STAT 101, 102, 203 (formerly 103), 270 (formerly MATH 272) or 301 may not take STAT 201 for further credit. Quantitative.

**STAT 203-3 Introduction to Statistics for the Social Sciences**

Descriptive and inferential statistics aimed at students in the social sciences. Scales of measurement. Descriptive statistics. Measures of association. Hypothesis tests and confidence intervals. Students in Sociology and Anthropology are expected to take SA 255 before this course. Intended to be particularly accessible to students who are not specializing in Statistics. Students with credit for STAT 101, 102, 103, 201, 270, ARCH 376 or, BUEC 232 (formerly 332), may not subsequently receive credit for this course. Recommended: a research methods course such as SA 255, CRIM 120, POL 213 or equivalent is recommended prior to taking STAT 203. Quantitative.

**STAT 270-3 Introduction to Probability and Statistics**

Basic laws of probability, sample distributions. Introduction to statistical inference and applications. Corequisite: MATH 152 or 155 or 158. Students wishing an intuitive appreciation of a broad range of statistical strategies may wish to take STAT 100 first. Quantitative.

**STAT 285-3 Intermediate Probability and Statistics**

This course is a continuation of STAT 270. Review of probability models. Procedures for statistical inference from survey results and experimental data. Statistical model building. Elementary design of experiments and regression methods. Introduction to lifetime analysis. Introduction to time series. Introduction to stochastic processes. Prerequisite: STAT 270. Prerequisite or corequisite: MATH 232. This course may not be taken for credit by students who have credit for STAT 330 prior to the Fall 03-3 term. Quantitative.

**STAT 290-3 Selected Topics in Probability and Statistics**

Topics in areas of probability and statistics not covered in the regular undergraduate curriculum of the department. Prerequisite: dependent on the topic covered.

**STAT 300W-3 Statistics Communication**

Guided experiences in written and oral communication of statistical ideas and results with both scientific and lay audiences. Prerequisite: Admission to the major or honors programs in statistics or actuarial science at SFU. Corequisite: STAT 350. Writing.

**STAT 302-3 Analysis of Experimental and Observational Data**

The standard techniques of multiple regression analysis, analysis of variance, and analysis of covariance, and their role in experimental research. Prerequisite: any STAT course, or BUEC 232, or ARCH 376. Students cannot obtain credit for STAT 302 if they already have credit for STAT 350, or if they are simultaneously enrolled in STAT 302 and STAT 350. Statistics major and honors students may not use this course to satisfy the required number of elective units of upper division statistics. However, they may include the course to satisfy the total number of required units of upper division credit. Quantitative.

**STAT 330-3 Introduction to Mathematical Statistics**

Review of probability and distributions. Multivariate distributions. Distributions of functions of random variables. Limiting distributions. Inference. Sufficient statistics for the exponential family. Maximum likelihood. Bayes estimation, Fisher information, limited distributions of MLEs. Likelihood ratio tests. Prerequisite: STAT 285 and MATH 251. Quantitative.

**STAT 336-3 Job Practicum I**

This is the first term of work experience in a co-operative education program available to statistics students. Interested students should contact their departmental advisors as early in their career as possible for proper counselling. Units from this course do not count towards the units required for an SFU degree. Prerequisite: students must apply and receive permission from the co-op co-ordinator at least one but preferably two terms in advance. They will normally be required to have completed 45 units with a GPA of 2.5 before they may take this practicum course. The course will be graded on a pass/withdraw basis. A course fee is required.

**STAT 337-3 Job Practicum II**

This is the second term of work experience in a co-operative education program available to statistics students. Units from this course do not count towards the units required for an SFU degree. Prerequisite: STAT 336 or Job Practicum I from another department. Students must apply and receive permission from the co-op co-ordinator at least one term in advance. The course will be graded on a pass/withdraw basis. A course fee is required.

**STAT 350-3 Linear Models in Applied Statistics**

Theory and application of linear regression. Normal distribution theory. Hypothesis tests and confidence intervals. Model selection. Model diagnostics. Introduction to weighted least squares and generalized linear models. Prerequisite: STAT 285 and MATH 251. Quantitative.

**STAT 380-3 Introduction to Stochastic Processes**

Review of discrete and continuous probability models and relationships between them. Exploration of conditioning and conditional expectation. Markov chains. Random walks. Continuous time processes. Poisson process. Markov processes. Gaussian processes. Prerequisite: STAT 285 and MATH 251 or consent of instructor. Quantitative.

**STAT 390-3 Selected Topics in Probability and Statistics**

Topics in areas of probability and statistics not covered in the regular undergraduate curriculum of the department. Prerequisite: dependent on the topic covered.

**STAT 400-3 Data Analysis**

A problem-based course emphasizing the exploratory aspects of statistical analysis with emphasis on modern computer-oriented methods. Prerequisite: STAT 350. Quantitative.

**STAT 402-3 Generalized Linear and Nonlinear Modelling**

A skills oriented unified approach to a broad array of non-linear regression modelling methods including classical regression, logistic regression, probit analysis, dilution assay, frequency count analysis, ordinal-type responses, and survival data. Prerequisite: STAT 350. Quantitative.

**STAT 403-3 Intermediate Sampling and Experimental Design**

A practical introduction to useful sampling techniques and intermediate level experimental designs. Prerequisite: STAT 302 or 350. Students with credit for STAT 410 or 430 may not take STAT 403 for further credit. Statistics minor, major and honors students may not use this course to satisfy the

required number of elective units of upper division Statistics. However, they may include the course to satisfy the total number of required units of upper division credit. Intended to be particularly accessible to students who are not specializing in Statistics. Quantitative.

### **STAT 410-3 Statistical Analysis of Sample Surveys**

An introduction to the major sample survey designs and their mathematical justification. Associated statistical analyses. Prerequisite: STAT 350. Quantitative.

### **STAT 430-3 Statistical Design and Analysis of Experiments**

An extension of the designs discussed in STAT 350 to include more than one blocking variable, incomplete block designs, fractional factorial designs, and response surface methods. Prerequisite: STAT 350 (or MATH 372). Quantitative.

### **STAT 436-3 Job Practicum III**

This is the third term of work experience in a co-operative education program available to statistics students. Units from this course do not count towards the units required for an SFU degree. Prerequisite: STAT 337 or Job Practicum II from another department. Students must apply and receive permission from the co-op co-ordinator at least one term in advance. The course will be graded on a pass/withdraw basis. A course fee is required.

### **STAT 437-3 Job Practicum IV**

This is the fourth term of work experience in a co-operative education program available to statistics students. Units from this course do not count towards the units required for an SFU degree. Prerequisite: STAT 436 or Job Practicum III from another department. Students must apply and receive permission from the co-op co-ordinator at least one term in advance. The course will be graded on a pass/withdraw basis. A course fee is required.

### **STAT 438-3 Job Practicum V**

This is an optional fifth term of work experience in a co-operative education program available to statistics students. Units from this course do not count towards the units required for an SFU degree. Prerequisite: STAT 437 or Job Practicum IV from another department. Students must apply and receive permission from the co-op co-ordinator at least one term in advance. The course will be graded on a pass/withdraw basis. A course fee is required.

### **STAT 450-3 Statistical Theory**

Distribution theory, methods for constructing tests, estimators, and confidence intervals with special attention to likelihood methods. Properties of the procedures including large sample theory. Prerequisite: STAT 330. Quantitative.

### **STAT 460-3 Bayesian Statistics**

The Bayesian approach to statistics is an alternative and increasingly popular way of quantifying uncertainty in the presence of data. This course considers comparative statistical inference, prior distributions, Bayesian computation, and applications. Prerequisite: STAT 330 and 350. Quantitative.

### **STAT 490-3 Selected Topics in Probability and Statistics**

Topics in areas of probability and statistics not covered in the regular undergraduate curriculum of the department. Prerequisite: dependent on the topic covered.

### **STAT 495-3 Directed Studies in Probability and Statistics**

Independent reading or research on consultation with the supervising instructor. Prerequisite: written permission of the department undergraduate studies committee.

### **STAT 602-3 Generalized Linear and Nonlinear Modeling**

A methods oriented unified approach to a broad array of nonlinear regression modelling methods including classical regression, logistic regression, probit analysis, dilution assay, frequency count analysis, ordinal type responses, and survival data. A project will be assigned related to the student's field of study. Prerequisite: STAT 302 or 350 or permission of instructor. Open only to graduate students in departments other than Statistics and Actuarial Science.

### **STAT 650-5 Quantitative Analysis in Resource Management and Field Biology**

The use of statistical techniques and mathematical models in resource management with special emphasis on experimentation, survey techniques, and statistical model construction. Prerequisite: A course in parametric and non-parametric statistics. This course may not be used for the satisfaction of degree requirements in the Department of Statistics and Actuarial Science.

### **STAT 801-4 Statistics**

Advanced mathematical statistics. A survey of basic concepts in point estimation, interval estimation and hypothesis testing. Principles of inference.

### **STAT 802-4 Multivariate Analysis**

An advanced course in multivariate analysis. Factor analysis, discriminant analysis, principal components, canonical correlations. Multivariate regression and analysis of variance.

### **STAT 804-4 Time Series Analysis**

An introduction to time series models and their analysis. Both time-domain and frequency-domain techniques will be studied. Prerequisite: STAT 450 or equivalent or permission of the instructor.

### **STAT 805-4 Non-Parametric Statistics and Discrete Data Analysis**

Order statistics, rank statistics, procedures based on the empirical distribution function. Asymptotic efficiencies, goodness-of-fit, contingency tables, log-linear models and further topics will be offered. Prerequisite: STAT 330 or equivalent or permission of the instructor.

### **STAT 806-4 Lifetime Data Analysis**

Statistical methodology used in analysing failure time data. Likelihoods under various censoring patterns. Inference using parametric regression models including the exponential, Weibull, lognormal, generalized gamma distributions. Goodness-of-fit tests. The proportional hazards family, and inference under the proportional hazards model. Stratification and blocking in proportional hazards models. Time dependent covariates. Regression methods for grouped data. Prerequisite: STAT 450.

### **STAT 811-2 Statistical Consulting I**

This course is designed to give students some practical experience as a statistical consultant through classroom discussion of issues in consulting and participation in the department's Statistical Consulting Service under the direction of faculty members or the director.

### **STAT 812-2 Statistical Consulting II**

Students will participate in the department's Statistical Consulting Service under the direction of faculty members or the director.

### **STAT 870-4 Applied Probability Models**

Application of stochastic processes: queues, inventories, counters, etc. Reliability and life testing. Point processes. Simulation.

### **STAT 880-0 Practicum I**

First term of work experience in the Co-operative Education Program.

### **STAT 881-0 Practicum II**

Second term of work experience in the Co-operative Education Program.

### **STAT 882-0 Practicum III**

Third term of work experience in the Co-operative Education Program.

### **STAT 883-0 Practicum IV**

Fourth term of work experience in the Co-operative Education Program.

### **STAT 890-4 Statistics: Selected Topics**

#### **STAT 891-2 Seminar**

A course to be team taught by current and visiting faculty and with topics chosen to match the interests of the students.

#### **STAT 894-2 Reading**

#### **STAT 895-4 Reading**

#### **STAT 898-6 MSc Thesis/Project**

#### **STAT 899-6 PhD Thesis/Project**

## **Sustainable Community Development SCD Faculty of Environment**

### **SCD 201-3 Introduction to Sustainable Community Development**

First required course for the SCD Certificate. Builds an understanding of strengths and weaknesses of conventional approaches to development; rationale for alternative approaches; varying interpretations of community and of development; and essential components for creating local economic development strategies. Sustainable Community Development is introduced as a framework to meet current social and economic needs while ensuring adequate resources are available for future generations. Prerequisite: 30 units or SCD Certificate program approval or permission of the Director for SCD. Not permitted for credit toward the SCD Post Baccalaureate Diploma. Students who have taken CED or SCD 201 for credit may not take this course for further credit. Corequisite: students may not take this course concurrently with upper division SCD courses. Breadth-Social Sciences.

### **SCD 301-4 Sustainable Community Development Theory and Practice**

A theoretical foundation for understanding sustainable development at the community level; including an integrated approach to environmental, economic, and social aspects of development. Emphasizes economic and policy instruments, and planning tools, for engaging in and implementing SCD. Prerequisite: SCD certificate program approval and CED or SCD 201 or SCD diploma program approval or completion of 60 credit hours or permission of the Director for SCD. Students who have taken CED or SCD 301 for credit may not take this course for further credit. Breadth-Social Sciences.

### **SCD 401-4 Social Enterprise for Sustainable Community Development**

Third required course for the SCD Certificate. Introduction to the theory and practice of social enterprise within a SCD context, including the appropriate form of social enterprise for a particular purpose. Prerequisite: CED or SCD 301, or permission of the Director for SCD. Students who have taken CED or SCD 401 for credit may not take this courses for further credit.

### **SCD 403-4 Leadership in Sustainable Community Development**

Fourth required course for the SCD Certificate. Concerned with approaches SCD leaders require as agents of change, including: tackling complex community issues in addition to offering innovative tools for engaging others in meaningful collaboration processes. Prerequisite: CED or SCD 301, or



permission of the Director for SCD. Students who have taken CED or SCD 403 for credit may not take this course for further credit.

#### **SCD 404-4 Project in Sustainable Community Development**

Provides students an opportunity to apply ideas and models acquired in the program to a practical problem in sustainable community development. Required for SCD PBD students. Certificate students must apply for special permission to take this course. Enrollment is limited. Prerequisite: CED or SCD 301, 401, 403 and permission of the Director for SCD. Students who have taken CED or SCD 404 for credit may not take this course for further credit.

#### **SCD 410-4 Special Topics in Sustainable Community Development**

A specific topic within the field of sustainable community development, not covered by regularly scheduled, required courses in the program. Prerequisite: CED or SCD 301 or permission of the Director for SCD. Students who have taken CED or SCD 410 with the same topic for credit may not take this course for further credit.

#### **SCD 412-4 Directed Studies in Sustainable Community Development**

Designed to permit students to expand their knowledge base and apply their critical thinking in SCD. Open to all SCD PBD students. Certificate students must apply for special permission to take this course. Enrollment is limited. Prerequisite: CED or SCD 301, 401, and 403, and permission of the Director for SCD. Students who have taken CED or SCD 412 for credit may not take this course for further credit.

### **TechOne TECH Faculty of Communication, Art and Technology**

#### **TECH 101-3 Communication, Teamwork and Collaborative Process**

Teaches essential skills for negotiating first-year course work successfully. Covers the principles, practice and understanding of effective communication, research, critical thinking and teamwork needed within both face-to-face and virtual environments. Presents opportunities to practice and develop communication and interpersonal skills, and make that expertise transferable from the classroom to the workplace.

#### **TECH 101W-3 Communication, Teamwork and Collaborative Process**

Teaches essential skills for negotiating first-year course work successfully. Covers the principles, practice and understanding of effective communication, research, critical thinking and teamwork needed within both face-to-face and virtual environments. Presents opportunities to practice and develop communication and interpersonal skills, and make that expertise transferable from the classroom to the workplace. Writing.

#### **TECH 106-3 Spatial Thinking and Communicating**

Introduces the world of 3D thinking, representation and communication, with a focus on spatial thinking. Provides the foundational skills and knowledge needed to understand, create, and use computer-generated 3D representations. Covers the technical bases of representing 3D environments, as well as cognitive science theories of visual thinking.

#### **TECH 114-3 Technology in Everyday Contexts**

Introduces the role of technologies in an increasingly complex world. Explores the nature and evolution of technology. Provides firsthand experience with a variety of computer, communication and engineering technologies and assesses the impact and

consequences of technology on both the individual and societal levels. Themes examined in this course focus on the use of technologies in situated applications and everyday contexts, giving students experience in relating the achievements of technology to human needs. Breadth-Social Sciences

#### **TECH 124-3 Design Thinking**

Investigates the role that design and the designer play in the world around us, and explores how design facilitates our understanding of our environment and facilitates communication with others. Examines the importance of precedent in design and how examples, models, patterns or standards reflect learning and critical thinking. Throughout the course students will, individually and in teams, use design questioning processes as tools to develop their critical thinking skills and to explore the role that design plays in their lives and the daily functioning of their communities. Breadth-Social Sciences.

### **Urban Studies URB Faculty of Arts and Social Sciences**

#### **URB 610-4 Urban Design: Integrating Theory and Practice**

This course is an examination of urban design as a discipline that involves the environmental, aesthetic, social, economic, geographic, ecological, historical, political, and cultural aspects of the built environment. The importance of creative design, the interrelationship between the spatial organization of a city, its efficient delivery of services, the social, cultural and economic considerations of the public realm, as well as the process of change in our pluralistic society will all be considered.

#### **URB 620-4 Urban Communities and Cultures**

This course is an introduction to the anthropological and sociological study of complex urban societies in comparative perspective. It includes study of anthropological and sociological approaches to urbanization, the nature of the city as a social system, and urban communities and cultures.

#### **URB 630-4 Urban Development, Planning and Policy**

The focus of this course is the evolving relationship between state interventions into the city, and dynamics of urban development. The class emphasizes the historical context to urban planning and policy, with particular reference to the Canadian city.

#### **URB 635-4 Urban Inequality and the Just City**

Examines the forces that have created and perpetuated urban social inequality, along with its political, economic, and cultural impact on cities. Explores the social movements, planning efforts, and policy initiatives that have tackled urban poverty and social exclusion in the struggle to create just cities.

#### **URB 640-4 Urban Regions and Urban Change**

The aim of this course is to develop a perspective on the study of urbanization by applying systematic approaches to specific regional and case contexts. Major theoretical and conceptual themes will be reviewed. Some emphasis will be placed upon the Canadian experience in order to develop a common ground among members of the course and some emphasis will be also placed upon the United States and Western Europe because of the dominance of those collective urban experiences and literatures. However, members of the course will be expected to develop an interest in a particular region, assemble a personal bibliography and report to the class on their enquiries. The list of references given to the class may be perused for selected items to initiate this personal work. Emphasis will be placed upon individual and/or participatory research.

#### **URB 645-4 Urban Sustainable Development**

In this course, we begin to answer the question: what does the idea of sustainable development mean for cities? Using case studies from Vancouver and around the world, we will seek to understand how urban sustainable development innovations are developed, designed, and implemented. Special attention will be paid to the importance of sustainable development linkages between urban issues related to economic development, social justice, and environmental conservation and protection.

#### **URB 650-4 Urban Governance**

This course is intended to confront students with many of the current administrative, policy, inter-governmental and political challenges of local/urban/city-regional government in the 21st century. It will enable students to critically evaluate the varied nature and development of urban and metropolitan governance through an assessment of differing city-regional forms and responsibilities. The primary emphasis is on: social, economic and political sustainability; ethnic, gender and ecological re-definitions of the city; urban fiscal constraints and possibilities; urban governance and local democracy; intergovernmental challenges; urban responses to and re-definitions of re-globalization; case studies of agenda setting and other policy cycle stages. The primary seminar focus is on urban Canada but comparative cases will be drawn from the United States, the EU, Asia and other jurisdictions.

#### **URB 655-4 Global Cities**

Students will critically evaluate and apply various approaches and concepts in assessing the phenomenon of the global city. Assessment of current Canadian and comparative cases and settings provides a basis for this examination, as does the various stages of the policy cycle.

#### **URB 660-4 Transportation and Urban Development**

Explores the relationships between mobility, economic activity, and social interaction that influence urban development. Topics considered will include the spatial dynamics underlying travel behavior, the vehicle and infrastructure technology used in meeting mobility needs, the organizations that deliver transportation services and the public policies that govern an urban transportation system.

#### **URB 665-4 Urban Housing Policy**

Examination of the roles of housing in an urban society, the evolution of urban housing policy in Canada, the policies that shape the existing housing system, and proposals for modifying housing policies and programs. The role of affordable housing as an essential component of a sustainable community will be emphasized.

#### **URB 670-4 Urban Research Methods**

Offers a tip-to-all approach to researching urban public policy problems, from imagining projects, to gathering interpreting data and presenting findings to the public. The emphasis of this program is for students to be able to understand the work of others and design their own studies. In addition to this, students are trained in how to apply descriptive statistics such as means, measures of spread and cross-tabulation. Students wishing to deepen their quantitative skills, such as multivariate, qualitative or spatial analysis, will be encouraged to take advanced programs offered in affiliated departments.

#### **URB 675-4 Urban Economic Development**

Reviews several traditional and contemporary theories of urban economic development, exploring the historical context, content and policy implications of each.

#### **URB 680-4 Managing Cities**

Examines theories of public management in an urban context; how governments allocate resources,



distribute income and regulate public enterprise in both pure and applied contexts. Taking a 'champion vs. challenger' approach, the first segment of the course describes in detail the dominant theory in public management — new public management — and then contrasts this theory with others common to the discipline including traditional approaches, cultural theory, representative bureaucracy and new institutionalism. The theory is illustrated using examples from the municipalities within the Greater Vancouver Regional District and other Canadian and international cities.

#### **URB 685-4 Health Status and Health Policy in Urban Canada**

The focus of this course is the distribution of health status within urban centers in Canada, and related health policy developments. The course will emphasize the systematic nature of health status distribution, the historical pattern of health inequality, emerging analyses of the role of 'place' in shaping health patterns, housing and health, and attempts to reformulate social policy in urban contexts to address 'social determinants' of health inequality in Canada.

#### **URB 690-4 The City in Art, Culture and Politics**

The city has long been a subject of, and site for, cultural reflection. This course recognizes that cultural and political ideas are not context-free. The course focuses on modern and postmodern thought and their relation to the evolving city.

#### **URB 693-2 Directed Readings I**

Supervised readings in an aspect of urban studies. Enrolment in URB 693 requires the prior approval of the Urban Studies Graduate Program Committee.

#### **URB 694-4 Directed Readings II**

Supervised readings in an aspect of urban studies. Enrolment in URB 694 requires the prior approval of the Urban Studies Graduate Program Committee.

#### **URB 695-4 Selected Topics in Urban Studies**

This course provides an opportunity for students to study one or more urban studies topics that lie beyond the scope of the other courses. This course will normally provide a more research-intensive experience than other graduate urban studies courses.

#### **URB 696-4 Seminar in Urban Studies**

In-depth study of two or three areas of urban studies with particular attention to (1) the contributions of various disciplines and (2) the development of a proposal for research to explore a suitable area of particular interest to the student. Where feasible, students will be involved with external organizations in developing their research proposal.

#### **URB 697-4 Research Project**

A research project on some aspect of urban studies supervised by a faculty member with the participation of a supervisory committee. Prerequisites: URB 696.

#### **URB 699-2 Research Project Completion**

Completion of a research project on some aspect of urban studies supervised by a faculty member with the participation of a supervisory committee. This course is intended for students who do not complete URB 697 within one month of the end of the term in which they are enrolled in it. Prerequisite: URB 697.

## **Women's Studies WS Faculty of Arts and Social Sciences**

### **WS 101-3 Introduction to Women's Issues in Canada**

An interdisciplinary study of current issues related to women's experiences in Canada. The focus will be on women's interaction with social structures and public policy and how these differ for different women's circumstances. Students who have taken WS 100 at

SFU may not take WS 101 for further credit. Breadth-Social Sciences.

### **WS 102-3 Introduction to Western Feminisms**

An historical and comparative survey of feminisms in Western Europe and North America. Students who have taken WS 100 at SFU may not take WS 102 for further credit. Breadth-Humanities.

### **WS 200-3 Women in Cross-Cultural Perspective**

The focus will be on the situation of women in cross-cultural perspective using literary, historical, anthropological and other appropriate sources. Prerequisite: WS 101 or 102 (may be taken concurrently).

### **WS 201-3 Colonizing Women: Canadian Women in Historical Perspective, 1600-1870s**

Examines the lives of Canadian women in the colonial context, including the role of women in European-Aboriginal relations, the founding of New France, and settlement in British North America. Themes such as sexuality, race, work, religion and politics will be explored through the study of primary documents and historical literature. Students who have taken WS 201 under the title Women in Canada, 1600-1920 may not take this course for further credit.

### **WS 202-3 Modernizing Women: Canadian Women in Historical Perspective, 1870s-1970s**

Examines the historical development of women's experiences and identities in Modern Canadian history. Looks closely at the ways in which ethnicity, race, class and sexuality have shaped women's lives, and examines the continuity and changes in work, sexuality, politics and domesticity over the 19th and 20th centuries through the study of primary documents and historical literature. Students who have taken WS 202 under the title Women in Canada, 1920 to the Present may not take this course for further credit.

### **WS 205-3 Women and Popular Culture**

A study of women's place in society as revealed through the analysis of a variety of media. Prerequisite: WS 101 or 102 (may be taken concurrently).

### **WS 207-3 Introduction to Feminist Theory**

A study of concepts, controversies and processes of feminist social theory. Prerequisite: WS 101 or 102 (may be taken concurrently).

### **WS 208-3 Feminist Research Methods**

Explores a variety of feminist research methods including the definition of feminist research, the quantitative/qualitative controversy, action research, participant observation, survey, ethnography, case study, oral history, transnational study, interviews and research ethics. Prerequisite: WS 101 or 102 (may be taken concurrently). Students who have taken WS 208 under the title Researching Women's Issues or WS 400 Methodological Issues in Women's Studies may not take this course for further credit.

### **WS 301-303-4 Special Topics in Women's Studies**

A specific topic within the field of women's studies, not otherwise covered in depth in regularly scheduled courses, will be dealt with as occasion and demand warrant. Prerequisite: six units in women's studies including WS 101 and/or 102.

### **WS 304-4 Women and Religion**

This course examines critical issues of women's relationships to theology and religious practice in major religious traditions. Prerequisite: six units in women's studies including WS 101 and/or 102.

### **WS 305-4 Conceiving Creativity**

Through the lens of science fiction, this course focuses on scientific and religious accounts of creativity, and of responsibility for (and to) the outcomes of that creativity. In considering the range

of relations amongst science and religion, it draws upon theories from social justice studies, including such topics as representation, participation and motivation within professional and other community domains of creativity. Prerequisite: 30 units. Students who have taken WS 310 (Special Topics) under this title may not take WS 305 for further credit. Breadth-Humanities.

### **WS 306-4 Women's Autobiographies, Memoirs, Journals**

An examination of women's autobiographical writings, focusing on self images, self presentations and world views. Prerequisite: six units in women's studies including WS 101 and/or 102.

### **WS 307-4 Women in British Columbia**

Selected topics in the history of women's experience in British Columbia, with particular attention to women's work, political action, family life and education. Prerequisite: six units in women's studies including WS 101 and/or 102.

### **WS 308-4 Women in the Economy: Paid and Unpaid Labour**

Explores the nature and conditions of women's paid and unpaid labour in the economy as well as various theories which explain labour market discrimination, the impact of national public policies on women's labour and the transnational interconnections that affect women's paid and unpaid labour. Prerequisite: six units in women's studies including WS 101 and/or 102. Students who have taken SA 335 and/or WS 310 or WS 308 under the title Women and Work may not take this course for further credit.

### **WS 309-4 Gender and International Development**

Examines from interdisciplinary and international perspectives how development is gendered and creates differential impacts, meanings and processes for women and men around the world. Prerequisite: 30 units. Students who have taken WS 310 Special Topic: Women and Development or WS 301 Special Topic: Gender and Development or WS 309 under the title Gender and Development may not take this course for further credit.

### **WS 310-4 Special Topics in Women's Studies**

A specific topic within the field of women's studies, not otherwise covered in depth in regularly scheduled courses, will be dealt with as occasion and demand warrant. Prerequisite: 60 units.

### **WS 312-4 Immigrants, Women and Transnational Migration**

Examines the global division of labor where migrant women as well as immigrant women tend to be exploited in numerous forms, ranging from lack of citizenship rights and erosion of skills to the risk of sexual assault, due to immigration/migration and social policies of various countries. Prerequisite: 30 units. Students who have previously taken WS 320 Special Topic: Immigrant Women and Economic Security may not take this course for further credit.

### **WS 313-4 Women and the Environment**

Examines women's participation in environmentalism. Among the topics discussed will be the nature/nurture debate, the roots of environmentalism, ecofeminism and reproductive rights. Prerequisite: 30 units. Students who have taken this course as a women's studies special topics course may not enrol for WS 313. Breadth-Social Sci/Science

### **WS 314-4 Race, Class and Gender Relations**

An examination of feminist, Marxist and anti-racist theories pertaining to the historical development, social construction, and interactive nature of race, class and gender relations. Prerequisite: six units in Women's Studies, including WS 101 and/or 102. Students who have taken either WS 301 or 310 as Special Topics: Race, Class and Gender may not take this course for credit.

**WS 315-4 Gender, War and Health**

A critical examination of conceptualizations of, and interrelationships amongst, gender, war and health. The course will include such topics as total war, military-and medical-industrial complex, militarism and healthism, and professionalization in relation to societal constructions of gender roles in family, paid work and volunteer contexts. Prerequisite: One of WS 101 or 102, or GDST 200 (may be taken concurrently). Students who have taken WS 206 under these topics may not take WS 315 for further credit.

**WS 316-4 Disciplining Sex: Feminist Science Studies and Sociobiology**

Conceptualizations of sex have played a fundamental part in the development of evolutionary theories in biology and psychology. At the same time, feminist critiques of these conceptualizations have been a major factor in the development of Feminist Science Studies. The interactions amongst these three approaches are examined, including methodologies, communities of practice and societal implications. Prerequisite: 30 units. Breadth-Humanities/Social Sciences/Science.

**WS 317-4 Bread Riots to Riot Grrls: Gender, Resistance and Protest in Historical Perspective**

An examination of social protest from a historical perspective. Analyzes the relationships between race, class, gender, sexuality and religion within the formation of social movements. Focuses mainly on the North American context. Prerequisite: 60 units, including at least 3 units in either Women's Studies or History. Students who have previously taken WS 301 with the same title may not take this course for further credit.

**WS 320-4 Special Topics in Women's Studies**

A specific topic within the field of women's studies, not otherwise covered in depth in regularly scheduled courses, will be dealt with as occasion and demand warrant. Prerequisite: 30 units.

**WS 327-4 Aboriginal Women in Canada**

Themes and issues relating to the historical and contemporary experiences of aboriginal women in Canada: indigenous theories of gender; evolution and political function of stereotypes of indigenous women in Canada; history of Canadian legislation regulating indigenous identity; relevance of feminist analysis; and history of activism. Prerequisite: 45 units. Students who have taken FNST 322 under this topic may not take this course for further credit. FNST 327 and WS 327 are identical and students may not take both courses for credit.

**WS 334-3 Law and Human Reproduction**

Overview of theoretical perspectives and available research on debates linked with human reproduction. Reconsideration of the effects of legislation, social policy and social change on contraception, birth, abortion, adoption, eugenics policies, new reproductive technologies, sexualities, and other topics. Historical and contemporary examples will be used. Feminist perspectives will be featured along with other approaches to human reproduction. Prerequisite: this course is identical to CRIM 334 and students may not take both courses for credit. Students who have taken CRIM 416, 417, 418 under the title Law and Reproduction may not take this course for further credit.

**WS 398W-4 Feminist Currents**

Explores recent debates and future directions of feminist thought and introduces students to different models of feminist writing. The writing-intensive component of the course trains students to develop analytical, writing, and research skills through a variety of writing activities and assignments. Prerequisite: two of WS 101, 102, or GDST 200 (may be taken concurrently). Writing.

**WS 399-4 Numeracy, Gender and Cultures**

Through an examination of the social construction of numeracy, this course will provide an introduction to measurement and difference issues within social justice movements. In analyzing such topics as the relationship between professional, state and community conceptualizations of mathematical competence, students will make use of introductory statistical concepts, methods and argument. Prerequisite: 30 units. Quantitative.

**WS 401-5 Research Project**

Individual or small group studies of community problems. The students will submit a prospectus for the project at least two months before the study is undertaken. The project will be directed by one of the faculty members of the program. Prerequisite: nine units in women's studies including WS 101 and/or 102; permission of instructor; approval of course proposal by department.

**WS 402-2 Directed Readings**

Provides opportunities for individual tuition at an advanced level. Prerequisite: nine units in women's studies including WS 101 and/or 102; permission of instructor; approval of course proposal by department.

**WS 403-3 Directed Readings**

Provides opportunities for individual tuition at an advanced level. Prerequisite: nine units in women's studies including WS 101 and/or 102; permission of instructor; approval of course proposal by department.

**WS 405-4 Theoretical Issues in Women's Studies**

A study and critique of feminist theories as they apply to the study of women. Each offering of the course will focus on a particular subset of feminist theories and applications. Prerequisite: 60 units including two Women's Studies courses, one of which must be WS 101 or 102. Students who have taken WS 311 or 411 may not take this course for further credit when it is subtitled Feminist Psychoanalytic Theories.

**WS 412-5 Women and Film, Films and Theories**

An examination of film theory and practice from a feminist perspective. Prerequisite: 60 units including two women's studies courses, one of which must be WS 101 or 102. Students who have taken WS 312 or WS 412 under the title Women and Film may not take this course for further credit.

**WS 421-3 Practicum I**

First term of work experience in the Women's Studies Co-operative Education Program. Units from this course do not count toward the units required for an SFU degree. Prerequisite: 30 units with a CGPA of 3.0; WS 101, 102 and two 200 division women's studies courses. Students should apply to the Faculty of Arts and Social Sciences co-operative education co-ordinator by the end of the third week of the term preceding the employment term.

**WS 422-3 Practicum II**

Second term of work experience in the Women's Studies Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: 45 units with a CGPA of 3.0; WS 101, 102 and two 200 division women's studies courses. Students should apply to the Faculty of Arts and Social Sciences co-operative education co-ordinator by the end of the third week of the term preceding the employment term.

**WS 423-3 Practicum III**

Third term of work experience in the Women's Studies Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: 60 units with a CGPA of 3.0; WS 101, 102 and two 200 division women's studies courses. Students should apply to the Faculty of Arts and Social Sciences co-operative education

co-ordinator by the end of the third week of the term preceding the employment term.

**WS 424-3 Practicum IV**

Fourth term of work experience in the Women's Studies Co-operative Education Program. Units from this course do not count towards the units required for an SFU degree. Prerequisite: 90 units with a CGPA of 3.0; WS 101, 102 and two 200 division women's studies courses. Students should apply to the Faculty of Arts and Social Sciences co-operative education co-ordinator by the end of the third week of the term preceding the employment term.

**WS 800-5 Methodology in Women's Studies Research**

An interdisciplinary seminar in methods of research in women's studies. Students will examine theoretical issues in women's studies methodology and study examples of research and criticism from women's studies in history, art/literary criticism, philosophy, psychology and social and natural sciences. Emphasis will be placed on developing a rigorous and creative interdisciplinary approach to problems. Students will apply methods studied in the course to their own areas of concentration.

**WS 820-5 Graduate Seminar in Women's Studies History**

This course will examine one or two critical issues in the history of women. Canada, England and France are of special interest in this course, but students, with the permission of the instructor, may focus their work on North America and/or Europe generally.

**WS 821-5 Graduate Seminar in the Psychology of Women**

This course will consist of an in depth exploration of both traditional and feminist theories of the development of female personality. Special consideration will be given to the impact of social and economic factors on women's psychology and the extent to which such factors are or are not taken into account.

**WS 822-5 Graduate Seminar in Feminist Theory**

This course will analyse and compare major feminist social and political theories, including those that have emerged from liberal, socialist and radical feminist traditions. The relationship among theories of sexism and political goals and practices will be discussed.

**WS 823-5 Graduate Seminar in Feminist Art/Literary Criticism**

This course will examine the development of feminist aesthetic theories with particular reference to literary, cinematic and/or art forms. The fundamental assumptions of feminist literary and/or art criticism as well as the principles of art forms will be discussed.

**WS 824-5 Graduate Seminar on Women and Social Policy**

This course will focus on one or more social issues and policies in such fields as law, health, economics, social welfare, and science and technology.

**WS 825-5 Graduate Seminar in Women, Technology and Social Change**

This course will focus on relationships between changes in the technological and scientific bases of a society and changes in other major aspects of that society, particularly as they affect women's roles and ideas about women. Emphasis will be on Europe and North America.

**WS 830-5 Selected Topics Graduate Seminar I  
WS 831-5 Selected Topics Graduate Seminar II  
WS 840-5 Directed Studies****WS 898-6 MA Thesis****WS 899-6 MA Extended Essays****WS 997-0 PhD Comprehensive Examination****WS 998-6 PhD Thesis****WS 999-6 MA Field Exam**

Prerequisite: completion of six graduate courses.

## Work Term WKTM

### Co-operative Education

#### WKTM 100-3 Cooperative Work Term I

Units from this course do not count towards the units required for an SFU degree.

#### WKTM 200-3 Cooperative Work Term II

Units from this course do not count towards the units required for an SFU degree.

#### WKTM 300-3 Cooperative Work Term III

Units from this course do not count towards the units required for an SFU degree.

#### WKTM 400-3 Cooperative Work Term IV

Units from this course do not count towards the units required for an SFU degree.

## World Literature WL

### Faculty of Arts and Social Sciences

#### WL 100-3 Introduction to World Literature

Explores how texts resonate in other cultural contexts, influence foreign traditions, and become works of world literature. Breadth-Humanities.

#### WL 101-3 Writing Global Migration

Explores international migrancy in world literature. May compare the texts of migrants and citizens, focus on a case study of migrants to and from a particular city or nation, or compare immigrant writings across cultures.

#### WL 101W-3 Writing Global Migration

Explores international migrancy in world literature. May compare the texts of migrants and citizens, focus on a case study of migrants to and from a particular city or nation, or compare immigrant writings across cultures. Writing.

#### WL 102-3 Literature Across Cultures

Explores moments of cross-cultural interaction, encompassing the literature of exploration, empire, post-imperial culture, and canonical or contemporary travelogues. Breadth-Humanities

#### WL 103-3 Pre-Modern World Literature

Surveys pre-modern texts of world literature.

#### WL 104-3 Modern World Literature

Surveys poetry and prose from the seventeenth-century to the present, with a focus on the literary exploration of issues of humanity. Breadth-Humanities

#### WL 200-3 Literary Analysis and Interpretation

Introduces major theoretical approaches to literature and fundamental techniques of literary analysis. Develops students' critical skills for analytical writing about literature in comparative, cross-cultural contexts. Prerequisite: nine units in World Literature, including WL 100, 103, or 104.

#### WL 201-3 East/West

Explores the relationship between Eastern and Western narratives. The focus may include the mutual influence of Eastern and Western cultural traditions and modernities, the construction of the 'East' in the West and of the 'West' in the East, theories of Orientalism and Occidentalism, and forms of East/West syncretism. Prerequisite: three units in World Literature or six units of B-Hum designated courses. Breadth-Humanities

#### WL 202-3 North/South

Explores how European traditions have influenced and engaged the cultures of the global 'South'. The focus may encompass the cultures and counter-cultures of empire and globalization and the 'tropicalization' of European genres and cultural forms under the influence of artists from Africa, Latin-America, and South Asia. Prerequisite: three units in World Literature or six units of B-Hum designated courses.

#### WL 203-3 Selected Genres in World Literature

Explores the cross-cultural trajectory of a genre or genres of world literature. Prerequisite: three units in World Literature or six units of B-Hum designated courses. Breadth-Humanities

#### WL 204-3 Human Rights Literature

Examines a diversity of world literature concerning Human Rights. May focus on writing in the face of political oppression, censorship, political and economic displacement, terrorism and/or warfare. Prerequisite: three units in World Literature or six units of B-Hum designated courses.

#### WL 300-4 How Theory Travels

Explores the counterpoint of Western and non-Western approaches to world literature. May draw from disciplines including comparative literature, history and anthropology, and focus on how concepts of world literature are imported into new cultural contexts. Prerequisite: 12 units in World Literature, including WL 200.

#### WL 301-4 Imperial Cultures

Explores the cultures of imperialism in a cross-continental and comparative framework. May focus on chronicles of discovery, moments of colonial contact, critiques of empire, and the imperial engagement with pre-conquest cultures. Prerequisite: 45 units including nine units in World Literature or nine units of B-Hum designated courses.

#### WL 302-4 Post-Imperial Cultures

Explores post-imperial notions of culture and universality, tradition and modernity, or nation and cosmopolis. May focus on narratives of independence, postcolonial self-fashioning, and imperial nostalgia. Prerequisite: 45 units including nine units in World Literature or nine units of B-Hum designated courses.

#### WL 303-4 Global Culture and Its Others

Explores cultural expressions of sameness and difference in an age of globalization and its discontents. May focus on transnational expressions of secularism and faith or of the metropolis and suburbia, or on forms of cross-pollination in world literature, cinema and music. Prerequisite: 45 units including nine units in World Literature or nine units of B-Hum designated courses.

#### WL 304-4 Exiles and Emigres

Explores the culture of peoples and individuals displaced by force or migrating by choice. May focus on the plight of refugees in the work of playwrights, essayists and novelists, on the work of emigre artists in different cultural traditions, or on a comparison of the literary cultures of exiles and emigres. Prerequisite: 45 units including nine units in World Literature or nine units of B-Hum designated courses.

#### WL 305-4 Sages and Poets

Explores wisdom literature, poetry, or the resonance of faith in secular world literatures. May focus on cross-cultural mystical quests, secular re-castings of narratives of faith and conversion, or the interplay of the religious and the secular in comparative supernatural literatures. Prerequisite: 45 units including nine units in World Literature or nine units of B-Hum designated courses.

#### WL 400-4 Literary Perspectives on Ancient Cultures

Explores the discovery, resonance, and/or influence of ancient literature and culture. May focus on the role and poetics of ancient cultures in modern writing. Prerequisite: 60 units including two 300 level courses in World Literature, English, or Humanities.

#### WL 401-4 Early Modernities

Explores early modern literature across cultures. May compare Eastern and Western texts or focus on the cross-cultural influence of a single genre or author. Prerequisite: 60 units including two 300 level courses in World Literature, English, or Humanities.

#### WL 402-4 Other Modernities

Explores the mutual constitution of modernity in North and South. May focus on modernism and its enemies, case studies of alternative modernities, or the pre-modern in discourses of the modern and anti-modern. Prerequisite: 60 units including two 300 level courses in World Literature, English, or Humanities.

#### WL 403-4 After Modernities

Explores works of contemporary world literature in the second half of the twentieth century. May focus on the postmodern as a response to the modern, on prevalent postmodern genres, or on the postmodern engagement with developments in philosophy, science, and the media in East and West. Prerequisite: 60 units including two 300 level courses in World Literature, English, or Humanities.

#### WL 404-4 Literature in Translation

Explores how texts not only lose but gain in translation through a consideration of the discovery and reception of ancient and canonical texts in new cultural contexts. May compare several texts or focus on a single work that has been reconceived in several cultures. Prerequisite: 60 units including two 300 level courses in World Literature, English, or Humanities.

#### WL 410-4 Selected Topic in World Literature I

Advanced seminar on a topic in World Literature. Prerequisite: 60 units including two 300 level courses in World Literature, English, or Humanities.

#### WL 420-4 Selected Topic in World Literature II

Advanced seminar on a topic in World Literature. Prerequisite: 60 units including two 300 level courses in World Literature, English, or Humanities.

#### WL 430-4 Selected Topic in World Literature III

Advanced seminar on a topic in World Literature. Prerequisite: 60 units including two 300 level courses in World Literature, English, or Humanities.

#### WL 440-4 Selected Topic in World Literature IV

Advanced seminar on a topic in World Literature. Prerequisite: 60 units including two 300 level courses in World Literature, English, or Humanities.

#### WL 450-4 Directed Readings in Language and Literature

Independent study of literature in a language other than English. Prerequisite: Admission by permission of the instructor and department.

#### WL 480-4 Research Seminar for Honors Essay

Examines the methods and methodologies of world literature by focusing on case studies of influence, reception and translation. The case studies will be chosen in relation to students' approved topics for honors essays. Students will present research for their honors essay to the class. Prerequisite: Lower division and language requirements for the World Literature major plus 12 units of upper division requirements including WL 300. Open only to students who have been accepted into the World Literature honors program. Admission is by permission of the Instructor and the Department.

#### WL 490-4 Honors Graduate Essay

Examines the methods and methodologies of world literature by focusing on case studies of influence, reception and translation. The case studies will be chosen in relation to students' approved topics for honors essays. Students will present detailed research and well-developed drafts of their essay to the class. In addition to the weekly seminar, honors students will meet regularly with their supervisors. Prerequisite: Lower division and language requirements for the World Literature major plus 12 units of upper division requirements including WL 300. Open only to students who have been accepted into the World Literature honors program. Admission is by permission of the Instructor and the Department.

# Academic and Campus Services

## Alumni Association

007 Diamond Alumni Centre, 778.782.GRAD (4723)  
Tel, 778.782.6776 Fax, alumni@sfu.ca,  
www.sfu.ca/alumni

Students who complete a degree, certificate, diploma or professional development program become a lifetime member of the Alumni Association. Membership benefits include communications; social, networking and professional development events; campus privileges; group discounts on quality products and services; and belonging to a community of over 100,000 graduates worldwide. Alumni Relations works closely with the Alumni Association to keep alumni informed, involved and invested in the alumni community and future of Simon Fraser University.

## Archives and Records Management

0400 Maggie Benston Student Services Centre,  
778.782.3261 Tel, 778.782.4047 Fax,  
archives@sfu.ca, www.sfu.ca/archives

Archives' mandate is to acquire original archival materials that document all University programs and activities or that enhance its teaching and research. The University archives acquires three major categories of materials as follows.

- official University records including those of the board of governors, senate, University committees, faculties, departments and administrative offices
- materials documenting the wider University community including private papers of the Simon Fraser University Faculty Association, Simon Fraser Student Society, University labor organizations and the private papers of prominent individual faculty, staff and students
- private historical research collections including the Association of Canadian Publishers (ACP), John Howard Society (JHS), W.A.C. Bennett and collections relating to the women's movement

Archives also holds non-circulating original copies of all theses and dissertations.

The University archives is a multimedia collection including film, video and sound recordings, maps, plans and architectural drawings, documentary art, photographs, and digital records.

## Services to Researchers

The reference area is equipped with audio and video equipment. Arrangements can be made for viewing films. Reproduction requests for photocopies and photographic copy prints are accommodated whenever possible. Finding aids to various collections are available in hard copy or on the archives' website. Information is available about archival collections at other repositories.

## Services to the Institution

To help fulfil its mandate, archives administers a records management program. The department also operates the University Records Centre (URC), providing temporary storage for official, semi-active University records. Staff provide consulting and training support to campus offices concerning record-keeping policy, practices, records retention and disposal. The department also co-ordinates copyright compliance, administers the access to information and privacy program, and responds to all formal access requests submitted under the *Freedom of Information and Protection of Privacy Act*.

## Service Hours

Archives is open for researchers 9 am – 12:30 pm and 1:30 pm – 4 pm, Tuesday to Friday.

## Athletics

Chancellor's Gymnasium, 778.782.4906 Tel,  
www.athletics.sfu.ca

Since its inception in 1965, Clan athletics has established a high performance tradition. The program is perhaps best epitomized by its six consecutive United States Sports Academy Director's Cups which are awarded annually to the top National Association of Intercollegiate Athletics (NAIA) program, by its 80 alumni who have represented Canada at the Olympic Games, and 100 alumni who have competed in the Canadian Football League.

The University has chosen to compete in both the US-based NAIA and Canadian Inter-university Sport (CIS) to provide its high performance athletes with the right competition. Varsity sports include: men's and women's basketball, cross-country/track and field, wrestling, golf, soccer, swimming and diving; men's football; women's softball and volleyball.

The student recreation and athletic fee provides free admission to all University athletics regular season competitions. See www.athletics.sfu.ca.

## Canada Post

Located inside 8961 Cornerstone Mews, Burnaby, BC  
V5A 4Y7, 778.782.3098 Tel, 778.782.4783 Fax,  
post\_office@sfu.ca

The post office is a full service Canada Post Outlet offering the sale of stamps, packaging, shipment tracking, and other material to ensure your package arrives at its destination.

Post office hours are Monday to Friday,  
10 am – 4:30 pm.

## Centre for Students with Disabilities

1250 Maggie Benston Student Services Centre,  
778.782.3112 Tel, 778.782.5457 TTY,  
www.sfu.ca/disabilityaccess

The centre's mission is to create, foster and advocate for a non-discriminatory, inclusive and welcoming environment, free of physical, programmatic, informational and attitudinal barriers, and to provide students with disabilities an equal opportunity to experience full, productive and successful academic lives. The centre supports this mission by developing and updating University policies, procedures and programs. It provides direct services to academically qualified students with documented disabilities to ensure full, fair and equal access to all University services, programs and facilities. Academic support services include, but are not limited to: exam and lecture modifications; adaptive technology access; note-taking assistance; advising; general advocacy, etc. Students requiring any of these services will supply current documentation at their own expense. To avoid possible delays in receiving services, contact the centre at least three months prior to term start.

The centre also works with other University departments to ensure access to services, programs and facilities, including on-campus housing, parking, library access, etc.

## Chartwells Dining Services

Administrative Office, 2028 Academic Quadrangle,  
778.782.4481 Tel, foodservices@sfu.ca,  
www.compass-canada.com/Simon Fraser University

Chartwells Dining Services is pleased to be a part of the academic community and is proud to serve its staff, faculty and students.

Chartwells provides a variety of food outlets offering well-balanced, nutritional meals, fast food services, catering, and a convenience store. The meal plan enables students, faculty and staff to purchase meals on a prepaid account from any dining location. The program works just like a debit card; you prepay by depositing a chosen dollar amount into the Chartwells meal plan account. For further information, visit our office or refer to the dining plan brochure.

Contact the centre for more information during office hours, Monday to Friday, 9 am – 4 pm.

## Diamond Alumni Centre

778.782.4794 Tel, thedac@sfu.ca, www.sfu.ca/dac

The Diamond Alumni Centre, located on the north slope of Burnaby Mountain, is in the absolute idyllic setting. This beautiful facility is further enhanced by natural timbers, stone fireplaces and abundant greenery to complement the panoramic view of the North Shore mountains, Deep Cove and Indian Arm. Our professional services and gourmet food ensure that your experience with us will be special and memorable. We offer catering for up to 400 people for stand-up receptions and special events. We can accommodate up to 200 people seated for special events including business meetings, dinners, retirement parties and wedding receptions.

We also offer *Local Grown* products such as Ocean Wise Seafood and Sustainable Food Programs.

The Administration and Catering Office is open  
8 am – 4:30 pm, Monday to Friday,  
778.782.4795/4796 Tel, 778.782.4796 Fax

## The Residence Dining Hall

This facility offers traditional and not-so-traditional favorites including special theme meals and surprises. Enjoy breakfast specialties, grill (short order cooking), hot entrées, a carvery station, and a specialty culinary cooking station with an international variety of nutritious features made to order. We also offer *Local Grown* products such as Ocean Wise Seafood and Sustainable Food Programs. Check out Pizza Galore, fresh daily salads and soups, The Deli Corner, and a beverage island featuring special blends of Ritazza coffee, teas and cold beverages.

We have a convenience store, and accept cash or debit payment for these convenience store items.

## CJSF 90.1 FM Radio

216 Transportation Centre, 778.782.3727 Tel,  
778.782.3695 Fax, www.cjsf.ca

Funded by its students, CJSF 90.1 FM is Simon Fraser University's campus radio station providing programming that is rarely available from mainstream media. CJSF offers non-commercial music from all genres as well as special interest spoken word programming. The station airs public service announcements from campus groups about events and issues of interest to the campus and off-campus community. CJSF, currently operated by over 150 student and community volunteers, offers interesting volunteer opportunities. New volunteers should visit

www.cjsf.ca for volunteer orientation times. Listen to CJSF on 90.1 FM, 93.9 FM on cable, and on the Internet at www.cjsf.ca. CJSF programming is now also available as podcasts that can be downloaded from the website. Call or drop by the studios.

## School for the Contemporary Arts

778.782.3363 Tel, 778.782.5907 Fax, www.sfu.ca/sca

Information about the school's teaching programs can be found on page 152 and page 280. The school also sponsors the following campus community services.

### Public Events

The school presents free performance, film screening, concert or artist's demonstrations in the SFU Theatre on Thursdays at 12:30 pm during fall and spring terms. In addition, more than 100 performances and visual art shows are scheduled throughout the year in the SFU Theatre, Studio II, the Martin Bartlett Performance Space at Alexander Centre downtown, and the school's studios. Programming for both the noon series and evening events features a mix of professional touring artists and the school's students. For information, contact the SFU Theatre box office at 778.782.3514.

### Professional Development Offerings

Praxis Film Development Workshop, 778.782.7880, offers a resource centre, intensive workshops, public seminars, and courses on film-related topics.

## Bureau des affaires francophones et francophiles (BAFF) /Office of Francophone & Francophile Affairs (OFFA)

Cornerstone Building, 198-8960 University High Street, 778.782.6927 Tel, Burnaby, www.sfu.ca/baff-offa

BAFF/OFFA's mission is to develop, co-ordinate and promote programs and courses taught in French at Simon Fraser University (see below) in order to meet post-secondary education needs of Francophone and Francophile communities in British Columbia. It also provides the university community with opportunities to participate in cultural activities in French both on and off campus. We invite you to visit our websites for further information about the office and its programs.

### Faculty of Arts and Social Sciences

www.sfu.ca/frohort

- French Language Cohort Program in Public Administration and Community Services (FCP)

### Faculty of Education

www.sfu.ca/educfr

- Professional Development Program
- master's and doctorate programs
- Undergraduate courses and degrees
- Field Programs

## Graduate Student Society

2205 Maggie Benston Student Services Centre, 778-782-3899 Tel, 778-782-6594 Fax, www.sfugradsociety.ca

The Graduate Student Society (GSS) represents each graduate student at Simon Fraser University, and each graduate student is a member.

Graduate students are eligible to stand for election within their department as their department's representative to the GSS's graduate council, which oversees the society, as well as for election by the

graduate student body as officers of the GSS, who do much of the society's work.

Each term, the GSS collects various fees and levies to fulfil its responsibility to represent and service graduate students. Each of these fees has been approved by a referendum of graduate students, and a referendum must be held to change them. The general membership fee covers the cost of providing representation, running graduate student social events, and providing services such as access to legal advice and the ombudsperson. The cost of providing the U-Pass (page 33) and the health and dental benefits plan to graduate students are covered by GSS fees. Fees are also collected on behalf of a number of affiliated organizations operated by and for students such as The Peak (campus newspaper), CJSF (campus radio station), SFPIRG (public interest research group), etc. The complete breakdown of GSS membership is as follows (subject to change).

Graduate Student Activity Fee Breakdown	full time \$60.65	part time \$30.33
Graduate Student Society membership fee	\$33.00	\$16.50
Capital Levy	\$15.00	\$7.50
Peak Publication Society	\$4.90	\$2.45
Simon Fraser Public Interest Research Group	\$3.00	\$1.50
Simon Fraser Campus Radio Society (CJSF)	\$3.00	\$1.50
World University Service of Canada Student Refugee Program (WUSC)	\$1.00	\$0.50
First Nations Student Association	\$0.75	\$0.38

### Graduate Benefit Plan

Graduate Student Society Benefit Plan Office, 2201 Maggie Benston Student Services Centre, 604.268.6994 Tel, 604.268.7195 Fax, info@sfsbenefits.com, www.sfsbenefits.com

A service provided by the Graduate Student Society (GSS), the Graduate Benefit Plan provides eligible graduate students with dental, extended health and travel coverage benefits. The plan is mandatory. Therefore, graduate students are automatically enrolled provided the student is

- a member of the Graduate Student Society
- a graduate student (in a graduate career)
- completing at least one Simon Fraser University graduate course
- possesses basic medical coverage (MSP or the equivalent)

Based on the above criteria, the Graduate Benefit Plan fees are charged to all eligible graduate students at the time of course enrolment and are included in the student account fees. The current fee rates are \$59.76 per term for extended health coverage and \$67.90 per term for dental coverage.

On-leave students who wish to continue their benefits coverage while on leave can opt in to the benefit plan and should contact the Benefit Plan Office prior to the applicable deadline as follows: if a student goes on leave for the spring term, the deadline is January 30th to opt in; for the summer term the deadline is May 30th; for the fall term the deadline is September 30th.

Once per year, students may opt in/out or add family/couple coverage. Eligible students who have existing comparable coverage may waive the benefits by completing the online opt out form before the applicable deadline. The deadline is 30 days from the initial benefit plan enrolment date or on the anniversary of benefit plan enrolment. For example, a new graduate student who started in September 2007

can opt in/out or add family/couple coverage between September 1st and September 30th each year.

For forms, booklets, additional fees or more information, please visit www.sfsbenefits.com

## George and Ida Halpern Centre

Halpern Centre, 778.782.4910 Tel, 778.782.3420 Fax

The Halpern Centre was donated to the University as a setting for cultural and intellectual endeavors which are not part of the scheduled University credit offerings. It is a venue for events of the highest scholarly, social and cultural value, including lectures by distinguished visitors, discussion groups, seminars, learned conferences, dissertation defences, art exhibits, musical performances, etc.

The centre may be booked by University departments and community groups whose activities are consistent with the centre's stated purposes. There is no rental fee for University-sponsored events. Space bookings, reserved by a University individual, require sponsorship of the individual's department or, in the case of student clubs or unions, through the Simon Fraser Student Society.

## Health and Counselling Services

0164 Maggie Benston Student Services Centre, 778.782.4112 Tel, 778.782.5888 Fax

For more information regarding any service, visit <http://students.sfu.ca/health>

### Mission

To promote and provide holistic and innovative health care and health promotion that is readily accessible and sensitive to the diverse needs of our students and campus communities. Key services include health clinics, health promotion, physiotherapy, counselling and outreach.

### Counselling

0101 Maggie Benston Student Services Centre, 778.782.4615 Tel

2566 Simon Fraser University Surrey, 250 – 13450 102nd Avenue, Surrey, BC, V3T 0A3, 778.782.8022 Tel, [surrey\\_counsellor@sfu.ca](mailto:surrey_counsellor@sfu.ca)

Health and Counselling Services staff recognize the unique pressure and stress that students endure. The counsellors help manage university life challenges, and academic and personal goals with free short-term counseling, group discussions, and workshops. Discussions are confidential. Same day appointments are available for initial visits and for students in crisis. If you want to talk, we are here. Visit <http://students.sfu.ca/health/counselling>.

### Health Clinics

0101 Maggie Benston Student Services Centre, 778.782.4615 Tel,

medical emergencies 778.782.4500 Tel

300 Simon Fraser University Vancouver,

778.782.5200 Tel,

medical emergencies (via Security) 604.522.5252 Tel

After hours physicians: 604.522.2311 Tel, 6 pm – 7 am, Monday to Friday, weekends, holidays

Visit one of the doctors or nurses for all medical needs in a strictly confidential environment. Book an appointment or walk in. Services for students include primary health care, urgent care, vaccinations, allergy shots, travel medication, birth control, pregnancy testing, sexually transmitted infection screening, and minor procedures, etc. Urgent medical care is also available for Simon Fraser University staff and faculty.

## Health Promotion

0164 Maggie Benston Student Services Centre,  
health\_promo@sfu.ca, 778.782.4674 Tel

The health promotion team works hard to foster healthy students and a healthy campus community. We offer healthy living sessions and events, and work with other campus groups to build a healthy campus environment. The focus areas are active living, nutrition, sexual health, substance use and abuse prevention, mental health and stress management, illness and injury prevention. See <http://students.sfu.ca/health/healthpromotion>.

## Physiotherapy

070 Chancellor Gymnasium Complex,  
778.782.3284 Tel, hcs\_physio@sfu.ca

For those dealing with injuries or pain, don't wait for it to get worse. The physiotherapist is available to all Simon Fraser University students, staff and faculty, and UniverCity residents. The physiotherapy clinic is located at the Burnaby campus on the bottom floor of the gym complex (one floor down from the pool). No doctor's referral required (except WCB and ICBC claims). See <http://students.sfu.ca/health/physiotherapy>.

## SFU Nightline

604.857.7148 evenings, weekends and holidays

Nightline is an after-hours referral telephone service operated by a team of trained student volunteers. Callers are invited to ask questions that they may be reluctant or embarrassed to ask others, or seek advice about friends, family or other areas of concern. Nightline is completely anonymous. The service operates on weekdays from 4:30 pm to 8:30 am, and 24 hours on weekends and holidays. Call 604.857.7148. For more information, visit [www.students.sfu.ca/nightline](http://www.students.sfu.ca/nightline).

## Customized Workshops

0164 Maggie Benston Student Services Centre

Health and Counselling Services extend beyond the centre into the campus community. Many services that we provide 'in-house' can also be delivered to the campus location of your choice. Contact us to arrange a professional staff or peer educator presentation, workshop or outreach session.

Popular topics include nutrition, work/life balance, stress management, and healthy relationships. For more information or to book a workshop online, visit <http://students.sfu.ca/health/workshops>.

## Human Rights Office

3045 Academic Quadrangle, 778.782.4446 Tel,  
778.782.5468 Fax, betaylor@sfu.ca, www.sfu.ca/hro

On April 7, 2003 the Simon Fraser University Board of Governors approved changes to GP 18, the Harassment Policy, which expanded the policy's scope to include discrimination as a proscribed behavior. As such, the Human Rights Policy responds to the University's obligations under the BC Human Rights Code to provide a discrimination and harassment free environment for the students, faculty and employees. The objectives of the expanded policy are to educate the University community about human rights issues and to provide procedures by which complaints of discrimination and harassment can be addressed, mediated and resolved.

To reach the Director of Human Rights, visit, telephone, fax or email at the numbers and addresses shown above. Normal business hours are Monday to Friday, 8:30 am – 4:30 pm but the office is frequently closed when mediation sessions, meetings or seminars are in process. Appointments are necessary

but can often be scheduled on the same day that contact is made with the office.

The principles of natural justice and impartiality govern the complaint process. The director can offer advice and assistance to those dealing with situations on their own, or mediation services can also be provided. In exceptional circumstances, formal complaints are referred to an external investigator who is an experienced administrative lawyer.

For more information about the Human Rights Policy, including the definition of discrimination and harassment and the types of harassment it covers, please visit our website.

## Indigenous First Nations Student Centre

1500 Maggie Benston Student Services Centre,  
778.782.6929 Tel, 778.782.5682 Fax,  
Monday to Friday, 8:30 am – 4:30 pm,  
<http://students.sfu.ca/firstnations>

The centre offers an indigenous, culturally respectful, relevant, responsible and reciprocal environment, including a study lounge/computer room, and student support services to self-identified Aboriginal students (First Nations, Métis, Inuit). Support programs include workshops about scholarship and bursary awards application processes, Refdesk, tutoring, and alumni mentoring. Cultural events include beginning University terms with welcoming events, drum making/drum group workshops, and the annual Simon Fraser University Traditional Graduate Honoring Ceremony.

The centre also provides referrals to, and information regarding the University's Student Services, Aboriginal community resources, and band/agency liaison through long distance phone and fax services.

The First Nations student life co-ordinator offers students the opportunity to acquire knowledge and tools for academic success. Call the co-ordinator at 778-782-5663 for assistance.

The centre's staff work closely with the First Nations student recruitment co-ordinator (telephone 778.782.6891) to successfully transition Aboriginal students from the application and enrolment process to the community of the Indigenous First Nations Student Centre and the University.

## Interfaith/Chaplaincy Centre

3200 Academic Quadrangle, 778.782.3180 Tel,  
<http://students.sfu.ca/interfaith>

The University is served by an interfaith chaplaincy comprising numerous chaplains representing the Christian faith and other religions. They provide a wide spectrum of social and spiritual services, and help anyone including students, staff and faculty.

For special events, weekly services and meetings, call the office. Students are warmly invited to visit between 10 am – 3 pm, Monday to Friday.

## IT Services

1001 Strand Hall, 778.782.3234 Tel,  
778.782.4242 Fax, [www.sfu.ca/itservices](http://www.sfu.ca/itservices)

IT Services (ITS) provides all students, faculty and staff with access to the SFU Email system, eLearning systems, web publishing space, research systems, library systems, campus labs, campus wireless network, student enrolment system, and the university's business systems, to support all educational, research and business endeavors at SFU. Computing IDs are automatically created for all incoming students, faculty and staff to access all electronic resources. Specialty software is provided

for instructional uses, statistical analysis, and for web and database programming. A 24 hour help line is available at 778.782.3230 or via [help@sfu.ca](mailto:help@sfu.ca). In-person student assistance is available in the campus labs in the library and at AQ3148, or telephone 778.782.3930.

## Learning and Instructional Development Centre (LIDC)

7560 Education Building, 778.782.3910 Tel,  
778.782.4900 Fax, [www.sfu.ca/lidc](http://www.sfu.ca/lidc), Monday to  
Thursday, 8:30 am – 4:30 pm, Friday 8:30 am – noon,  
1 – 4:30 pm.

Our mission is to help create an enriched academic environment by supporting and promoting effective teaching, stimulating and conducting research and scholarly activity, assisting in the integration of instructional technologies, and providing media services and classroom support.

## Educational Support & Innovation (ESI), LIDC

7560 Education Building, 778.782.3910,  
778.782.4900

This group provides a wide variety of services to faculty and other instructional staff, including instructional development and support by

- delivering workshops to various groups
- consulting on the design, development and evaluation of learning
- teaching evaluation
- assisting teachers with face-to-face teaching or on-line teaching
- supporting technology integration in courses
- providing a consultation on the preparation of teaching portfolios, teaching evaluations, and student assessment methods
- helping to develop a resource centre on teaching, learning and technology in teaching

ESI also co-ordinates and organizes instructional development and educational technology programs (workshops, seminars, lecture series, symposia and conferences) and provides services (consultations, publications, and resource library) for Simon Fraser University's academic community to enhance the quality of teaching and learning at the University.

Some of our programs include

- certificate program in university teaching and learning
- annual fall and spring term TA/TM days
- instructional skills workshop
- ISW facilitator development workshop
- certificate in web-based instruction
- voice and presentation skills series
- teaching and learning with technology
- conversations about teaching
- teaching and learning readers' group
- teaching portfolio development series

## Classroom Technology Assistance, LIDC

P9301 Shrum Science Centre, 778.782.4828 Tel,  
778.782.4616 Fax, Monday to Thursday,  
8 am – 10 pm, Friday 8 am – 4:30 pm

2622 West Mall Centre, 778.782.5538 Tel, Monday to  
Thursday, 8 am – 8 pm, Friday 8 am – 4:30 pm

The Classroom Technology Assistance Centre has two locations. Audio, visual and computer equipment for classroom projects is available for loan to students as well as advice and instruction about proper equipment use. When requested by faculty, audio recordings of lectures are produced for student use. Access lectures on the web at [www.sfu.ca/lectures](http://www.sfu.ca/lectures).

## Media Design Group, LIDC

7760 Education Building, 778.782.3910 Tel,  
778.782.4900 Fax, [www.sfu.ca/lidc](http://www.sfu.ca/lidc)

We provide leadership and service in media and communications technology for the advancement of university teaching and learning. Our media staff provides comprehensive media capability in both conventional and digital formats using the current technology. We find creative solutions to problems, we offer guidance and support through consultation, and we are pleased to assist with your projects.

## Technical Services, LIDC

7528 Education Building, 778.782.4755 Tel,  
778.782.3199 Fax

Technical Services keeps the University's classrooms as contemporary as possible through expertise in research, design, installation, and service. Advice is offered to staff, faculty, students and special interest groups about lecture theatre operations. Other services include sales of audio visual materials, the dissemination of cable and satellite services over the in-house CATV system, video conferencing, and webcasting. Expertise is offered to those wishing to purchase or evaluate equipment, plan system installations, or learn about new technologies.

## Library Services

### Samuel and Frances Belzberg Library

Simon Fraser University Vancouver, 515 West  
Hastings Street, Vancouver, BC, V6B 5K3,  
778.782.5050 Tel, 778.782.5052 Fax,  
[www.sfu.ca/about/belzberg](http://www.sfu.ca/about/belzberg)

The Belzberg Library supports teaching, research and lifelong learning at Simon Fraser University Vancouver by providing reference assistance, liaison, borrowing, course reserve items, and materials requests from the W.A.C. Bennett Library and Simon Fraser University Surrey library. On-line services, including the library catalogue, full text databases, electronic journals, and access to Web sources, form an essential element of this 'electronic' library.

The library collection, which supports Simon Fraser University Vancouver courses and programs, consists of more than 10,000 books and several hundred journal titles, microfilm, fiche, and digital collections. In addition, students have full access to the other Simon Fraser University campus libraries, including almost 2.5 million items and extensive online collections at the main Bennett Library in Burnaby.

The Samuel and Frances Belzberg Library was developed through the generous donation of the Belzberg family.

Library hours: Monday to Thursday 9 am – 10 pm;  
Friday 9 am – 7 pm; Saturday 10 am – 5 pm, Sunday  
10 am – 5 pm (fall and spring terms). Service hours  
are reduced during term breaks, summer term, and  
public holidays.

### W.A.C. Bennett Library

Burnaby campus, library hours 778.782.4351, library  
information 778.782.3869, Fax 778.782.3023,  
[www.lib.sfu.ca](http://www.lib.sfu.ca)

The library provides a range of collections, services,  
space, and technology to support students,  
researchers and faculty in their academic pursuits.

### Collections

The library has over 2.7 million books and subscribes  
to over 54,000 journals, of which 47,000 are online.

Strong collections are available in all  
University-taught disciplines. The library website  
provides access for researchers on or off campus  
through the library catalogue, indexes to journals,

electronic journals, and other digital resources.

Special Collections include the contemporary  
literature collection for the avant-garde poetry  
student, the finest William Wordsworth collection in  
Canada, the Wosk-McDonald Aldine collection, BC  
publishing materials, British Columbia literary, social,  
and political materials, editorial cartoons, significant  
manuscript and archival collections. The curriculum  
collection contains curriculum guides and suggested  
readings prescribed by the Ministry of Education for  
BC school use. A collection of sound recordings,  
scores, slides, DVDs, videos and films is available in  
the Media Resource Centre. The maps, data, and GIS  
area provides access to computer-readable files of  
statistical and other data such as survey, census and  
GIS files, and over 120,000 maps.

### Information

Librarians help find library resources, suggest  
research strategies, and answer questions. Visit the  
third floor Alumni Information Commons help desk,  
Monday to Thursday 9 am – 8 pm; Friday 9 am – 6  
pm; Saturday and Sunday 10 am – 6 pm. Off-campus  
users can reach a librarian online via the AskAway  
live chat reference service Sunday to Thursday  
10 am – 9 pm; Friday and Saturday 11 am – 5 pm, or  
via email at [libask@sfu.ca](mailto:libask@sfu.ca). Research classes are  
offered at term start with an introduction to effective  
research techniques. Liaison librarians provide  
customized, course-specific research instruction upon  
faculty request.

### Space

Designated quiet study carrels are located on the  
floors 4, 5, and 6, with a silent study room on the fifth  
floor. Group study rooms are on floor 2 and may be  
reserved through the website. The library, in  
consultation with the Centre for Students with  
Disabilities, provides assistance to students with  
disabilities such as reserved study rooms.

### Technology

The third floor Alumni Information Commons offers  
computers, laser printers, color printers, scanners  
and application software. Technicians will help with  
problems at the help desk. Computers are also  
available on floors 2, 4, 5 and 6. Microform readers  
and printers, DVD, video and cassette tape players,  
photocopy machines, and laptop computer lending is  
available. Bring-your-own computer carrels are on the  
sixth floor, with wireless access on all floors. Adaptive  
technology is available for students with disabilities.

### Using the Library

The student identification card is also a library card,  
and is required to borrow materials. Reserve  
materials are assigned short loan periods of two  
hours to one week to increase availability. Lecture  
recordings for selected courses are accessible  
digitally. Faculty and students are eligible for a free  
library card from other Canadian university libraries.  
Document delivery services provide access to  
materials not held at the University through  
agreements with BC and other post-secondary  
libraries. Delivery of the University's collections to  
distance education students is also provided.

### Hours

Monday to Thursday 8 am – 11:45 pm; Friday  
8 am – 8 pm; Saturday and Sunday 10 am – 10 pm.

Normally, the building closes during statutory  
holidays. For service hours information, visit the  
library website at [www.lib.sfu.ca/about/hours.htm](http://www.lib.sfu.ca/about/hours.htm)

### Fraser Valley Real Estate Board Academic Library

Simon Fraser University Surrey, 778.782.7411 Tel,  
778.268.7420 Fax, [www.lib.sfu.ca/about/surrey/](http://www.lib.sfu.ca/about/surrey/)

This library supports teaching, learning and research  
at Simon Fraser University Surrey. A full range of  
services, including reference, liaison, instruction,

circulation, course reserves and document delivery  
are offered. The library also circulates laptop  
computers, digital camcorders and other media  
equipment for class or assignment use.

The on-site collections support Simon Fraser  
University Surrey programs and include over 15,000  
books, 100 print journals, DVDs, videos, CDs,  
CD-ROMs and games. Students can arrange delivery  
of items from the Burnaby and Vancouver libraries to  
the Surrey campus, thereby providing access to an  
additional 2.5 million titles. The library's on-line  
collection (375,000 e-books, 47,000 e-journals,  
580,000 art e-images and hundreds of databases)  
can be accessed on the web anytime, anywhere.

## Microcomputer Store

8961 Cornerstone Mews, Burnaby, BC V5A 4Y7,  
778.782.3098 Tel, 778.782.4783 Fax,  
[www.sfu.ca/microstore](http://www.sfu.ca/microstore), [micro\\_store@sfu.ca](mailto:micro_store@sfu.ca)

The store sells educationally-priced computer  
hardware, software, supplies and accessories to  
current Simon Fraser University students, staff and  
faculty. Educational discounts are available on  
computer hardware (Apple, DEL, HP, Lenovo, Sony,  
etc.) and software (Adobe, Corel, FileMaker,  
Microsoft, Symantec, etc.). The store stocks  
hardware, software, toner, memory, CD media, paper,  
cables and other items. It also has demonstration  
computers, monitors and printers. The service shop  
can upgrade and/or repair most computer equipment.  
Hours are Monday to Friday, 10 am – 4:30 pm.

## Museum of Archaeology and Ethnology

8602 Education Building, 778.782.3325 Tel,  
778.782.5666 Fax, [www.sfu.museum](http://www.sfu.museum), Monday to  
Friday, 10 am – 12 noon and 1 – 4 pm, closed on  
statutory holidays

The museum exhibits and collects objects from  
around the world, with a specific emphasis on the  
archaeology and ethnology of BC First Nations,  
especially the Northwest coast. Virtual exhibits on  
many topics can be found on our website. The  
museum is located in the northeast corner of the AQ  
in the Atrium off the north concourse near  
Renaissance Coffee.

## Office of the Ombudsperson

2267 Maggie Benston Student Services Centre,  
778.782.4563 Tel, [ombudsoffice@sfu.ca](mailto:ombudsoffice@sfu.ca),  
[www.sfu.ca/ombudsperson](http://www.sfu.ca/ombudsperson)

The Ombuds Office is dedicated to promoting fairness  
for all University community members. The  
ombudsperson provides information about existing  
review or appeal procedures, and advises on, and  
assists with, informal complaint resolution and  
problem solving processes. The ombudsperson may  
also inquire into the administration of University  
practices, procedures, processes and policies.

## Centre for Online and Distance Education

1300 West Mall Centre, 778.782.3524 Tel,  
778.782.4964 Fax, toll free within Canada  
1.800.663.1411, [codehelp@sfu.ca](mailto:codehelp@sfu.ca), [www.sfu.ca/cde](http://www.sfu.ca/cde)

Courses offered through the centre provide an  
alternative to traditional classroom learning for those  
who cannot attend scheduled classes. Since 1975,  
when Simon Fraser University introduced its first five  
distance education courses to 55 students, the  
program has grown to over 14,000 course enrolments  
a year in over 160 credit courses.

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All courses carry full university credit and run parallel to the on-campus offerings. Students may complete some certificate, diploma and degree programs entirely by distance education, or may take a combination of distance, evening or day courses to fulfil academic requirements.

Depending on the courses, students receive study material either online and/or in print. Other course-related components (e.g. DVDs, lab materials, equipment, etc.) are also prepared by and distributed through the centre. Each course is assigned a tutor marker who is responsible for grading assignments and assisting with course work. All have scheduled office hours for telephone and/or online consultation.

### The Peak Newspaper

2901 Maggie Benston Student Services Centre, 778.782.4560, [www.the-peak.ca](http://www.the-peak.ca)

Published weekly each term, *The Peak* is Simon Fraser University's independent student newspaper. Students may place free personal classified ads, sit on the board of directors, vote, volunteer, work as an editor or write a letter to share opinions. In addition to being a valuable source of information, *The Peak* provides employment and experience for Simon Fraser University students, maintains an archive, computer lab and website. The Peak is a member of the Canadian University Press.

### Peer Programs

2000 Maggie Benston Student Services Centre, 778.782.4678 Tel, 778.782.5773 Fax, <http://students.sfu.ca/peerprograms>, [student\\_leadership@sfu.ca](mailto:student_leadership@sfu.ca)

Peer educators are student volunteers who provide support and assistance to students on a variety of issues including health, academic performance, career development and personal counselling. They receive professional training and work under staff supervision to meet with student clients, organize campus events and conduct educational workshops.

To become a peer educator, volunteer profiles and online application are available at <http://students.sfu.ca/peerprograms>. Recruitment occurs in the spring term. Training is in late August.

### Public Affairs and Media Relations

2200 Strand Hall, 778.782.3210 Tel, 778.782.3039 Fax, [www.sfu.ca/pamr](http://www.sfu.ca/pamr)

This office provides media relations, information dissemination and publicizes campus events and achievements, offers media and community liaison, publishes *Simon Fraser University News* and *AQ* magazine, and maintains information on the University's website. It offers media training workshops, crisis and emergency communications assistance, and regulates the use of University branding. News and story ideas are always welcome.

### Recreation

101 Chancellor's Gymnasium Complex, 778.782.3675 Tel, 778.782.3425 Fax, [www.sfu.ca/recreation](http://www.sfu.ca/recreation)

Simon Fraser University provides a welcoming and friendly environment with diverse opportunities for friendship, fun and active living through recreation. The Burnaby campus offers a fitness centre, aquafit and fitness classes, drop-in swimming, drop-in sports (from badminton to basketball), competitive intramural leagues, lessons and classes including yoga, dance and martial arts, and clubs. There are also recreation opportunities at Simon Fraser University Surrey and at Simon Fraser University Vancouver. Recreation

memberships, which include fitness centre, pool, drop-in sports and intramurals, are free for most students. Visit the Recreation office in the Chancellor's Gymnasium Complex for a membership. Pre-register for recreation classes by visiting the Recreation office or by phoning 778.7823.4142.

### Residence and Housing Office

On-campus housing for traditional residences, studios, townhouses, apartments: Residence Administration Building, 778.782.4201 Tel, 778.782.5903 Fax, <http://students.sfu.ca/residences/>

#### Residences and Facilities

Residences are assigned based on age and year of study. Recently graduated secondary school students are generally assigned to those buildings which have required meal plans. Students who have previously lived in residence or who are college transfers may request living arrangements in Shell House or McTaggart-Cowan Hall. Townhouses are for upper division students.

There are several residences on campus.

- Towers\* co-ed residences with required meal plans accommodate 737 students
- Shell House, a traditional\* co-ed residence, accommodates 130 students
- McTaggart-Cowan Hall, a traditional\* co-ed residence, accommodates 200 students.
- Hamilton Hall, a co-ed residence, accommodates 103 graduate students in single, fully furnished studio suites.
- a townhouse complex accommodates 396 single students in four bedroom, fully furnished townhouses
- Louis Riel House, a graduate and family apartment building of 210 one and two bedroom units is supplied with a stove and refrigerator in each unit. Apartments are prioritized for couples, families with children, single parent families, single graduate and mature students. Some furnished apartments are available upon request.

\*In single student residences, accommodations are fully furnished and are equipped with refrigerators. Students share common kitchens in Shell House and McTaggart-Cowan Hall.

McTaggart-Cowan Hall, Hamilton Hall, the Towers, and Louis Riel House offer rooms suitable for students with disabilities.

#### Application

New or returning full-time Simon Fraser University undergraduate and graduate students applying for single student housing for fall term are encouraged to do so before February 28. Students must meet all applicable University and Residence and Housing deadlines, and eligibility requirements before their application will be considered.

Applications for Louis Riel House and Hamilton Hall are accepted year-round. Traditional residences and townhouse applications for the fall, summer and spring terms are available December 15 of the year prior. Apply as soon as possible within the application period dates. An academic application to the University is not an application for residence. Also, academic acceptance from the University is not an offer of residence.

#### Regulations

Every student entering a residence is required to sign a license agreement, which is renewable, based on the completion of residence and housing admittance and eligibility policy requirements. Students living in traditional residences and the townhouses are required to re-apply for the fall term.

### Off Campus Housing

<http://www.sfuoffcampushousing.com/>

This website contains a current listing of all types of student housing in the neighboring community. The service is free to students. Listings are not inspected. Landlords listing their accommodation are required to pay a per listing fee for a one month display.

### SFU Bookstore

#### Burnaby campus store

Maggie Benston Student Services Centre, 8888 University Drive, Burnaby, BC, V5A 1S6, 778.782.3656 Tel, 778.782.3401 Fax, [bookstore@sfu.ca](mailto:bookstore@sfu.ca), [www.sfu.ca/bookstore](http://www.sfu.ca/bookstore), 9 am – 4:30 pm Monday to Thursday, 9:30 am – 4:30 pm Friday

#### Surrey campus store

Mezzanine, Simon Fraser University Surrey, 250 – 13450 102nd Avenue, Surrey, BC, V3T 0A3, 778.782.7537 Tel, 778.782.5219 Fax, [srybooks@sfu.ca](mailto:srybooks@sfu.ca), [www.sfu.ca/bookstore](http://www.sfu.ca/bookstore), 10 am – 3 pm Monday to Friday

#### Vancouver campus store

Harbour Centre Mall, Simon Fraser University Vancouver, 555 West Hastings Street, Vancouver, BC, V6B 4N4, 778.782.5048 Tel, 778.782.5219 Fax, [hcbooks@sfu.ca](mailto:hcbooks@sfu.ca), [www.sfu.ca/bookstore](http://www.sfu.ca/bookstore), 10 am – 6 pm Monday to Friday, 10 am – 5 pm Saturday

SFU Bookstore is a not-for-profit service to students. Owned by the University and operating on a break-even basis, the Bookstore works to provide the right book at the right time, and at the best possible price. The Bookstore has virtually every required text at least two weeks before the start of classes.

Course books are available at their respective campuses — the Burnaby campus store carries course books for the Burnaby campus and Distance Education courses; the Vancouver store has course books for Vancouver campus courses; the Surrey campus store carries course books for Surrey campus courses. Enrolled students can use the Bookstore eService to review required course books with the option to purchase online.

The Burnaby and Vancouver stores have a selection of general books that cover a variety of subjects and focus on the specific interests of customers at each campus.

All three stores offer an assortment of Simon Fraser University insignia merchandise, stationery supplies and general giftware.

### SFU Campus Security

#### Patrol Operations/Information Centre

01 Transportation Centre, 778.782.3100 (24 hours), 778.782.3469 Fax, [security@sfu.ca](mailto:security@sfu.ca), [www.sfu.ca/security](http://www.sfu.ca/security)

SFU Campus Security operates and provides campus patrol, emergency response, campus information, Safe Walk, complaint investigation and referral programs, the campus lost and found, parking sales, and the University's key and card access.

778.782.4500 (24 hours) all emergencies, 604.444.4929 (24 hours) or [www.sfu.ca/security](http://www.sfu.ca/security) for road conditions, 778.782.5451 lost and found, 778.782.5448 card access, 778.782.3920 lockshop/keys



## General Office

1300 Transportation Centre, 778.782.5983 Fax, 778.782.5450 personal security

## Parking Services

3110 West Mall Centre, parking@sfu.ca, 778.782.5534 Tel, 778.782.5386 Fax, 778.782.4577 information telephone line

All parking lots on campus, with the exception of visitor parking, are reserved for valid permit holders. Those without valid permits, including Burnaby campus visitors, park in one of the five designated visitor parking lots (rates subject to change).

Parking Lot	Price per term	Eligible for
G search lot	\$174.08	undergraduate and graduate students, faculty and staff
Convocation Mall and West Mall reserved parking space	\$380.25	undergraduate and graduate students, faculty and staff
visitor parking	\$2.75 per hour, \$11.75 per day	undergraduate and graduate students, faculty, staff and visitors

Undergraduate students may purchase a permit for G lot, Convocation Mall or West mall as follows:

### G Lot (search lot)

#### Parking Lottery

G lot permits are available through the parking lottery held prior to the fall and spring terms. Students may enter the lottery through the Parking Services website at [www.sfu.ca/security/Parking](http://www.sfu.ca/security/Parking), or in person at the Parking Services office. You must have a Simon Fraser University student number to enter, as well as a current Simon Fraser University e-mail account.

#### Open Sale

An open sale is held on April 20. Open sale permits is based on availability and sold first-come, first-served.

### Convocation Mall and West Mall (reserved space)

Undergraduate students may purchase a permit for the Convocation and West Mall reserved parking lots, when available. If available, permits are purchased through an open sale, which is held approximately two weeks prior to the beginning of each term. Please visit the Parking Services website for a schedule of open sale dates. Once these permits are issued, they must be renewed each term to maintain status. For more detailed information, visit the Parking Services website at [www.sfu.ca/security/Parking](http://www.sfu.ca/security/Parking).

## SFU Career Services

0300 Maggie Benston Student Services Centre, 778.782.3106 Tel, [www.sfu.ca/career](http://www.sfu.ca/career), [careers@sfu.ca](mailto:careers@sfu.ca)

Make your transition from Simon Fraser University to the workforce with our multidisciplinary team of career advisors and peer educators. These professionals support students and recent graduates through this transition with free one-on-one career sessions, on-line resources, mock interviews, and workshops. Drop by MBC 0300 to review our extensive career services resource library to 'kick start' your career.

## SFU Childcare Society

Children's Centre, west side of Burnaby campus; Verdant, UniverCity; 778.782.4569 Tel, 778.782.3058 Fax, [www.sfu.ca/childcare-society](http://www.sfu.ca/childcare-society)

The society has 13 quality childcare programs for children of students, staff and faculty. The unique

world-class facility provides full and part-time care to over 260 children aged three months to 11 years. The satellite program Verdant, for one to three year olds, operates at UniverCity on the Burnaby campus east side. School aged children are transported off campus to attend a local Burnaby school.

All childcare staff are fully qualified early childhood educators, and provide a caring, enriched, developmentally balanced program. Parent participation at the program and board levels is an important part. Fees are payable monthly. Childcare bursaries are available to eligible students and staff. The Ministry for Children and Families also subsidizes fees for those parents qualifying under their financial need criteria. For information and/or a visit, call the Childcare office, 8 am – 5 pm Monday to Friday.

## SFU Community Trust

Suite 150 – 8960 University High Street, 604.291.3000 Tel, 604.291.3189 Fax, [www.univercity.ca](http://www.univercity.ca)

The SFU Community Trust is responsible for the planning and development of UniverCity, a model sustainable community neighboring Simon Fraser University. Developed through a collaborative and integrated planning process, UniverCity is designed to be a compact, mixed use and transit-oriented community founded on four cornerstones of sustainability: equity, economy, education and environment. UniverCity is currently home to over 2,000 residents and is planned to accommodate more than 10,000 when fully built. Visit our website or our office for more information.

## Simon Fraser Public Interest Research Group (SFPIRG)

326 Transportation Centre, 778.782.4360 Tel, 778.782.5338 Fax, [sfpirg@sfu.ca](mailto:sfpirg@sfu.ca), [www.sfpirg.ca](http://www.sfpirg.ca)

This student-based resource centre, located at the Burnaby campus, provides resources, training and support for students who are working on social and environmental justice issues.

SFPIRG offers a lounge; an alternative resource library about social justice issues; battery recycling; a bicycle fix-it space with bike tools, volunteer mechanics and cycling resources; volunteer opportunities; and skills training. Students may volunteer in the library; attend a workshop on issues such as media-skills training, participatory action research, anti-oppression and conflict resolution; or work with one of SFPIRG's action groups or projects on issues such as climate change, and the impact of the coming Olympic Games. SFPIRG's research component, called the Action Research eXchange (ARX), facilitates research partnerships between students and community groups in need of research, but without the resources to conduct it. Apply to work on a community-based project and get class credit for your research. Visit [www.sfpirg.ca/arx](http://www.sfpirg.ca/arx).

SFPIRG welcomes new volunteers to use resources, socialize, receive support for on and off campus organizing, to join a project or start one of your own. Visit the office Monday to Friday, 10:30-4:30 pm. SFPIRG has over 25 years of student organizing for a just, sustainable, and meaningful world.

## Simon Fraser Student Society

2250 Maggie Benston Student Services Centre, 778.782.3870 Tel, 778.782.5843 Fax, [www.sfss.ca](http://www.sfss.ca)

### Membership

All students are members of the Simon Fraser Student Society (SFSS), a registered not-for-profit organization that has represented Simon Fraser

University students for over 40 years. The goals of the SFSS are to unite student voices, lobby the University and government about important student issues, and to provide valuable services to its members.

### Resources

The SFSS provides resources and support to dozens of departmental student unions and clubs. Each department has its own student union so if a student enrolls in a course in any department, they are eligible for membership in that department's student union. Students may also participate in activities of the SFSS itself. As well, any student may join an SFSS club, or start one of their own.

### Representation

The SFSS supports constituency groups to ensure that all students have a voice in the student society and also the broader community. Examples of these constituencies are international students, women, First Nations, students with disabilities, and lesbian, gay, bisexual, transgendered and questioning students. The SFSS provides staff and funding for the Women's Centre ([www.sfuwomenctr.ca](http://www.sfuwomenctr.ca)) and Out on Campus ([www.outoncampus.ca](http://www.outoncampus.ca)).

### Services

The SFSS provides services such as the SFSS Copy Centre, free legal clinics, and the U-Pass program. It owns and operates food services including The Ladle, Higher Grounds coffee bar, and the Highland Pub ([www.highlandpub.ca](http://www.highlandpub.ca)).

### Events

The SFSS organizes several fun yearly events such as pancake breakfasts and Clubs Days. Event notices are printed in the free Member Handbook and Day Planner which is available at the general office.

## SFSS Health and Dental Plan

The SFSS provides undergraduate students, including international students, with an extended health and dental plan that covers many services and expenses not covered by a basic health care plan, such as prescription drugs, dental cleanings and checkups, fillings, eye exams, eyeglasses and contact lenses, visits to health practitioners, travel coverage, and more. The SFSS Health and Dental Plan does not replace basic medical coverage such as Medical Services Plan (MSP). Students must have provincial health coverage or equivalent to be eligible to use the extended health coverage provided through the student plan. For information, eligibility and enrolment instructions, contact [studentcare.net/works](mailto:studentcare.net/works) at 866.369.8795 or visit [www.ihaveaplan.ca](http://www.ihaveaplan.ca).

### British Columbia Medical Services Plan

All students should maintain the British Columbia Medical Services Plan (BC MSP) while attending Simon Fraser University. The University is not liable for any medical or dental expenses while students attend here. Students from other Canadian provinces must also obtain BC MSP and should check with their provincial medical services plan to verify the coverage that would apply until a new BC MSP card is received. Remember to bring the Care Card when accessing health services.

#### Medical Requirements

Simon Fraser University does not require a pre-admission medical examination, but does reserve the right to require a student to submit a medical certificate at any time. It is the student's responsibility to have adequate hospital and medical insurance coverage. Adequate insurance is that which is provided under the Medical Services Plan of BC, or any other plan, government or private, that provides coverage equivalent to that offered under the Medical Services Plan of BC coverage.

## 458 Academic and Campus Services

Students who seek medical treatment through either the University Health Services or off-campus medical facilities must provide evidence of medical insurance. Failure to provide adequate information will result in a direct charge for services rendered. Often BC residents take health care for granted under the MSP of BC, but those who do not have medical coverage will bear the costs, which can be expensive.

The University assumes no liability for a student's failure to maintain adequate medical or hospital (or dental) insurance, nor is the University responsible for any costs not covered by the student's personal insurance plan(s), whether it is Medical Services Plan coverage or otherwise. Questions should be directed to the Medical Services Plan of BC, telephone 604.683.7151 (toll free).

Students who are not citizens or permanent residents should contact a private insurance company for coverage during the Medical Services Plan coverage waiting period. For private medical plan information, contact SFU International, 778.782.4232.

#### International and Exchange Students

New international and exchange students who will be in British Columbia for longer than six months must apply for MSP by themselves as soon as they arrive. Application forms for British Columbia MSP are available online at [www.hlth.gov.bc.ca/msp](http://www.hlth.gov.bc.ca/msp).

There is a 90 day waiting period for BC newcomers who are eligible for the BC Medical Services Plan. This waiting period is required by the BC government to process newcomers' applications and is governed by the BC MSP Act. Before or upon arrival, apply for private temporary insurance through the Global Campus Health Insurance Plan from the David Cummings Insurance Company, or another private carrier, to insure the first three months in Canada (two full months plus the remainder of the month of BC arrival). Global Campus Health Insurance Plan forms and information are available at SFU International or online at [www.david-cummings.com/sfu](http://www.david-cummings.com/sfu). Read the policy carefully to know which services are covered.

#### Exchange and Visiting Students

Students in Canada for less than six months are not eligible for the BC Medical Services Plan and must have private temporary coverage for the entire stay in Canada. For further information, contact SFU International at 778.782.4232; [intl\\_advising@sfu.ca](mailto:intl_advising@sfu.ca); <http://students.sfu.ca/international>.

### Membership Dues

Undergraduate Student Activity Fee Breakdown	full time \$62.14	part time \$31.09
Simon Fraser Student Society membership fee	\$32.99	\$16.50
Student Society Building Fund/Capital Levy	\$15.00	\$7.50
Simon Fraser Public Interest Research Group	\$3.00	\$1.50
Peak Publication Society	\$4.90	\$2.45
CJSF — Campus Community Radio Society	\$3.75	\$1.88
Student Refugee — WUSC	\$1.00	\$0.50
First Nations Student Association	\$0.75	\$0.38
Accessibility Fund	\$0.75	\$0.38

The Simon Fraser Student Society collects term fees and levies to fulfil its responsibility to represent and service students. Each member pays a membership fee to fund projects, services and advocacy. Senior citizens are exempt from SFSS fees.

### Simon Fraser University Gallery

3004 Academic Quadrangle, 778.782.4266 Tel, 778.782.3029 Fax, [www.sfu.ca/artgallery](http://www.sfu.ca/artgallery), [gallery@sfu.ca](mailto:gallery@sfu.ca), Tuesday to Friday, 10 am – 5 pm, Saturday noon to 5 pm, free admission, [www.sfu.ca/gallery](http://www.sfu.ca/gallery)

The gallery hosts exhibitions at two sites: the main exhibition space at the Burnaby campus, and Simon Fraser University Vancouver's Teck Gallery. Exhibitions are drawn from a range of sources and serve students, faculty, staff and the public. Many exhibitions are drawn from the Greater Vancouver region and as resources allow, from other parts of the world. Yearly, the gallery hosts at least one exhibition featuring work by Simon Fraser University students or faculty and staff. The main gallery is located on the busy Academic Quadrangle's south concourse. Exhibitions, talks, discussions and lectures are free to everyone. The gallery is the custodian of the University's 5,000 piece art collection. Approximately 1,300 are currently displayed around the University, many of them in public spaces.

### Statistical Consulting Service

K10557 Shrum Science Centre, 778.782.4670 Tel, [www.stat.sfu.ca/people/consulting](http://www.stat.sfu.ca/people/consulting), [stat\\_scs@stat.sfu.ca](mailto:stat_scs@stat.sfu.ca)

This service, a component of the Department of Statistics and Actuarial Science, provides advice and assistance in the design of experiments, surveys and analysis of all manner of data to university and community clients. The service draws on the statistics expertise of faculty and graduate students. The SCS has a full-time director who is a qualified statistical consultant. A satellite service is now available on a part-time basis at the Surrey campus.

### Student Development

2000 Maggie Benston Student Services Centre, 778.782.4476 Tel, 778.782.5773 Fax, [www.sfu.ca/studentlife](http://www.sfu.ca/studentlife)

#### General Information

Student Development's friendly staff can help you find the information you need at Simon Fraser University. We'll answer your questions, and if we don't know the answer, we'll contact someone who does.

#### New Student Orientation – Discover SFU

Three times a year the centre organizes orientation programs for new undergraduate and new graduate students. Over 3,000 students attend these orientation sessions each year, and you should, too! We work closely with other Burnaby and Surrey campus services that offer specialized orientation programs such as Parent & Family, First Nations, international, and residence. For more orientation information, visit [students.sfu.ca/orientation](http://students.sfu.ca/orientation).

### Leadership Programs

Each September, we accept a cohort of students into the Simon Fraser University LEAD certificate in innovative leadership, a non-credit program for student leaders that includes workshops from leadership experts and an applied community project.

Our department also works with other university departments to enhance student leadership programs including the annual Leadership Summit and Passport to Leadership. For more leadership information, visit [students.sfu.ca/leadership/](http://students.sfu.ca/leadership/)

### University Life (ULife)

[www.sfu.ca/ulife](http://www.sfu.ca/ulife)

The ULife initiative connects you with campus life. Find out about campus events and how to organize them, review current events, or post your own on the online events calendar.

### Food Bank

The centre operates the Simon Fraser University Food Bank in conjunction with the Simon Fraser Student Society to meet the needs of its community. For information about this confidential service, visit [students.sfu.ca/studentlife/foodbank](http://students.sfu.ca/studentlife/foodbank).

### Student Learning Commons

#### Director

E. Fairey BA, MA (Br Col), MLS (Tor)

#### Learning Services Co-ordinators

D. McGee Thompson BA (S Fraser), MA (Br Col)  
K. Ricketts BA (S Fraser), MA (Br Col)  
R. Silverman BA (Carleton), LLB (Ottawa), MEd (S Fraser)

#### EAL Services Co-ordinator

T. Mossman BPE, MA (TESOL) (Br Col)

#### Yosef Wosk Student Learning Commons

Co-ordinator, Simon Fraser University Surrey  
C. Wright BFA, MEd (Br Col)

#### Writing Services Co-ordinator

R. McCallum BA, MA (Texas)

[www.learningcommons.sfu.ca](http://www.learningcommons.sfu.ca)

The Student Learning Commons (SLC) assists with academic writing, learning strategies, English language skills, and works closely with library research, computer technology assistance and other student services. SLC services include workshops, appointments, drop-in assistance, in-class presentations and online resources. In Burnaby, the SLC is located on the main floor of the Bennett Library. The Yosef Wosk SLC at Simon Fraser University Surrey is located in the library on the podium level. At Simon Fraser University Vancouver, services are located in the Belzberg Library.

# Simon Fraser University Surrey

Central City, 250–13450 102nd Avenue, Surrey, BC  
V3T 0A3, 778.782.7400 Tel, 778.782.7488 Fax,  
www.surrey.sfu.ca, surrey@sfu.ca

## Executive Director

J. Curry BComm (Manit) MBA (S Fraser)

## Facilities and Services

In September 2006, Simon Fraser University opened its expanded Surrey campus. The facility is located in Central City, an award winning architectural complex designed by architect Bing Thom, an honorary degree recipient. The campus offers 322,000 square feet of classrooms, teaching and research laboratories, library facilities, and offices.

## Amenities

The campus is located in a commercial area with many amenities — shopping, recreation, parks and restaurants — within easy walking distance. All three campuses are linked by SkyTrain.

## Information Technology (IT)

778.782.7490 Tel, 778.782.7505 Fax,  
help-surrey@sfu.ca, www.surrey.sfu.ca/itservices

Client Support and Research Services (CaRS) and Network Services (NS) provide and maintain Simon Fraser University Surrey's computing and multimedia infrastructure. In support of Surrey academic programs, CaRS manages the distributed computing facilities including instructional classrooms, computer labs, studio labs, drop-in labs, the Library's InfoCommons, tutorial and seminar spaces, and the multimedia production studios. In support of the staff, faculty and research community, CaRS provides multi-platform microcomputer and workstation hardware and software support, printing, file storage, audio-video set-up, support and consultation services. NS provides the network (wired and wireless) and core services for the campus such as firewall, IP addressing, Active Directory domain servers, computer names, distributed file store, network time, and FTP.

## Fraser Valley Real Estate Board Academic Library

778.782.7411 Tel, 778.782.7420 Fax,  
Lib-surrey@sfu.ca, www.lib.sfu.ca/about/surrey/

This library supports teaching, learning and research at the Surrey campus. Services include reference, liaison, instruction, circulation, course reserves and document delivery. The library also circulates laptop computers, digital camcorders and other media equipment for class and assignment use. The on-site collections support the Surrey campus' programs and include 18,000 books, 100 journals, DVDs, videos, CDs, CD-ROMs and games. Arrangements can be made for the delivery of items to Surrey from the Burnaby and Vancouver university libraries, thereby providing access to an additional 2.5 million titles. The library's online collection (375,000 e-books, 47,000 e-journals, 580,000 art e-images and hundreds of databases) can be accessed on the web.

## Recreational Services

778.782.8171 Tel, http://cgi.sfu.ca/~recreati/newsite/

Recreational programs at Simon Fraser University Surrey are offered in partnership with the City of

Surrey Parks and Recreation. Access is currently available to Simon Fraser University Surrey community members including students who have been accepted or approved to programs/majors specifically available at the Surrey campus. Facilities include community fitness/weight rooms, swim sessions, and non-registered aquatic and fitness programs. Students in approved Simon Fraser University Surrey programs can also participate in various intramural and fitness classes.

## SFU Bookstore

778.782.7537 Tel, srybooks@sfu.ca,  
www.sfu.ca/bookstore, Monday to Friday,  
10 am – 3 pm

The Bookstore at Simon Fraser University Surrey sells course books for all classes offered at the Surrey campus. The Bookstore also offers an assortment of insignia clothing/giftware and stationery products.

## Registrar and Information Services

778.782.7400 Tel, 778.782.7403 Fax, stserv@sfu.ca,  
http://students.surrey.sfu.ca, Monday to Friday,  
9 am – 4:30 pm

Registrar and Information Services provides

- official transcripts
- verification of enrolment
- tuition fee payments and admission deposits
- processing of some financial assistance documents
- Simon Fraser University Surrey photo ID/Library card and U-pass production
- appointment bookings for academic advising

To view other resources available to Surrey campus students, please visit <http://students.surrey.sfu.ca>

## Student Development and Programming Centre

778.782.7407 Tel, 778.782.7403 Fax,  
studentlife-surrey@sfu.ca,  
www.sfu.ca/studentlife/surrey

This centre provides students with opportunities and support for their personal and academic development, their connection to others and to the University, and their involvement in shaping the campus community. This is accomplished through the New Student Orientation and Mentorship Programs, Student Ambassador Program, and spirit building events and initiatives. The centre is staffed by the student life co-ordinator, student staff and volunteers.

## Enrollment and Recruitment Services (Surrey Campus)

778.782.7400 Tel, 778.782.7403 Fax,  
ugrad-surrey@sfu.ca, www.surrey.sfu.ca/students

Enrollment and Recruitment Services provide prospective students, parents, teachers, counsellors, advisors and the general public with information about the people, programs, and services available at Simon Fraser University and the Surrey campus. Prospective student advisors provide detailed guidance on University entrance and admission, and also co-ordinate outreach activities such as campus tours, information sessions, shadow days, open houses, and presentations for a broad range of audiences. Online resources for prospective students are available at [www.surrey.sfu.ca/students](http://www.surrey.sfu.ca/students).

## Yosef Wosk Student Learning Commons at Surrey

Room 3695, 778.782.7614 Tel, 778.782.7420 Fax,  
<http://learningcommons.sfu.ca>

The Yosef Wosk Student Learning Commons is an academic learning centre providing friendly and knowledgeable assistance with a wide range of academic topics and skills including support in writing, learning skills, and course specific software, peer tutoring, math drop-in and more. Our goal is to provide students with the strategies and tools needed for academic success.

## Learning and Instruction Development Centre

[www.lidc.sfu.ca/](http://www.lidc.sfu.ca/)

The Learning and Instructional Development Centre (LIDC) provides pedagogical, media and technical support to the University community.

LIDC includes several divisions:

- Educational Support and Innovation (ESI) assists faculties and departments with learning design, learning technology and teaching enhancement
- Media Design operates an in-house, full-service digital media studio for the Simon Fraser University Community. Projects encompass rich-media productions, websites, print communication design, video productions and photography
- Classroom and Technical Services provides, maintains and manages the inventory of audio/visual equipment to classrooms, lecture theatres and public spaces at the Burnaby and Vancouver campuses

## Research

Simon Fraser University Surrey is home to faculty and graduate students conducting research across all faculties. Notably, the campus houses labs and researchers in interactive arts and technology, mechatronic systems engineering, computing science, education, mathematics and business. Just a few of the application areas under investigation include:

- bioinformatics
- digital game development
- virtual worlds
- wireless
- tangible interfaces
- eBusiness
- education policy
- operations research
- network architecture
- visual analytics
- user centred design
- control systems
- video compression
- software optimization
- regional development and planning
- sustainable communities
- tools for digital animation

A technology manager from the University Industry Liaison Office is based at Simon Fraser University Surrey who can assist in identifying technologies or researchers to work with companies, government and non-profit agencies.

# Simon Fraser University Vancouver

515 West Hastings Street, Vancouver, BC V6B 5K3,  
778.782.5000 Tel, 778.782.5060 Fax,  
www.vancouver.sfu.ca

## Executive Director

A. Cowan BA (Tor), MA (Car)

Unless otherwise noted, programs and services are located at the address above.

The Simon Fraser University campus in downtown Vancouver now comprises the headquarters at Harbour Centre, 515 West Hastings Street, the Morris J Wosk Centre for Dialogue at 580 West Hastings Street, the School for the Contemporary Arts studios at 611 Alexander, the Segal Graduate School of Business at 500 Granville Street, and the School for the Contemporary Arts at Woodward's, 149 West Hastings Street.

## Morris J Wosk Centre for Dialogue

580 West Hastings Street, Vancouver V6B 1L6,  
778.782.5800 Tel, 778.782.5818 Fax,  
dialogue@sfu.ca, www.sfu.ca/dialogue/

The Wosk Centre for Dialogue is a dedicated, International Association of Conference Centres rated facility available for use by university, business and community clients for conferences, meetings and events. It is also the site for dialogue-based programming associated with Simon Fraser University Continuing Studies Dialogue Programs and the Academic Centre for Dialogue. The Wosk Centre brings together diverse sectors and organizations to participate in open-minded discussion that broadens perspectives and inspires participants to find collaborative solutions to complex problems.

The unique Asia Pacific Hall has circular seating for up to 154, plus advanced technology capabilities including video conferencing, webcasting, translation and production services. Its name recognizes the federal government's support and honors Canada's Year of the Asia Pacific. The restored heritage bank building, which houses 14 meeting rooms, was a gift from Allied Holdings.

## Simon Fraser University at Woodward's

149 West Hastings Street, Vancouver V6A 1N5,  
School for the Contemporary Arts 778.782.7880 Tel,  
events and facilities 778.782.5800 Tel

A new home for the School for the Contemporary Arts is under construction at the heritage Woodward's site in the heart of old Vancouver. The school's distinctive programs in contemporary music, dance, theatre, film, visual art, and art and culture studies will relocate from the Burnaby campus in 2010. With exciting new cultural facilities — theatres, screening rooms, sound studios, and galleries — Simon Fraser University's new city space will combine public events with intensive interdisciplinary training, and promises to be a magnet for art scholars, students and enthusiasts from around the world. Please call for details of the inaugural program and ticketing information.

## Segal Graduate School of Business

500 Granville Street, Vancouver, BC V6C 1W6  
Graduate Business Programs: 778.782.5013  
Events and Facilities: 778.782.5800,  
www.business.sfu.ca/segal

This is the home of Simon Fraser University Business graduate management programs and services. The building was donated by chancellor emeritus Dr. Joseph Segal and his family. Located in the heart of the financial district, the restored heritage building houses doctoral, master's, diploma, certificate and executive programs and two research centres: CMA Centre for Strategic Change and Performance Measurement and CIBC Centre for Corporate Governance and Risk Management.

Degree and diploma programs offered include:

doctor of philosophy  
master of business administration  
executive MBA  
global asset and wealth management MBA  
management of technology/biotechnology MBA  
master of financial risk management  
graduate diploma in business administration

## Student and Registrar Services

778.782.5000 Tel, 778.782.5060 Fax, 10 am – 7 pm  
Monday to Thursday, 10 am – 5 pm Friday, (reduced  
hours in effect during term breaks),  
www.vancouver.sfu.ca/misc/inforeg.html

### Manager

A. Wiseman BTh, MDiv (Heritage Sem), MA (Trin W)

The office provides a wide range of services for all Simon Fraser University Vancouver students and prospective students including, but not limited to:

- information on all programs at Simon Fraser University Vancouver
- information on courses, programs and services at the Burnaby Mountain and Surrey campuses
- information on graduate programs
- academic advising
- assistance and information on admission to, and enrolment in, undergraduate and credit-free courses
- information on distance education courses and programs
- course changes
- fee payments

The Continuing Studies catalogue of programs, courses and events, as well as brochures describing individual programs, are available at Registrar and Information Services.

## Admission and Enrolment

Enrolment in undergraduate and graduate courses is a two step process. Students must first be admitted to the University before choosing courses. Admission to the University is competitive and applications should be completed early. Consideration for admission is given for the University as a whole and is not specific to any campus. Therefore, students wishing to enrol in undergraduate or graduate courses only at the Vancouver campus must meet all the University admission requirements. For information about undergraduate or graduate admission, please see the appropriate sections of this *Calendar*.

Those who are currently students of the University can select Vancouver courses through the usual course enrolment process. For information about undergraduate course selection, see "Student Enrolment" on page 26 and for graduate information, see "Graduate General Regulations" on page 219.

Enrolment for and/or admission to most credit-free programs is on-going and continues until the program or course is full. Call Continuing Studies at 778.782.5100 for information.

## Samuel and Frances Belzberg Library

778.782.5050 Tel, 778.782.5052 Fax, 9 am – 10 pm  
Monday to Thursday, 9 am – 7 pm Friday,  
10 am – 5 pm Saturday, and 10 am – 5 pm Sunday  
(September to April) (reduced hours during term  
breaks and summer semester), www.lib.sfu.ca/about/  
belzberg

### Head

K.V. Marotz BA (S Fraser), MLS (Br Col)

Belzberg Library serves students, staff and faculty of Simon Fraser University Vancouver with a range of library services including reference assistance, loan of library material, access to course reserve items and requests for materials from the W.A.C. Bennett Library at the Burnaby campus, the Simon Fraser University Surrey library, and other academic libraries. On-line services form an essential element of this electronic library. A web-based catalogue, commercial and public databases, electronic journals, and access to library files on the campus network are all available. Quiet study space is provided in the library, and group study rooms on campus may be booked online.

The library collection supports the courses and programs offered downtown. It consists of over 14,000 books and several hundred journal titles as well as microfilm and fiche collections. In addition, students have full access to the other Simon Fraser University libraries, including almost 2.5 million items and extensive online collections at the main Bennett Library in Burnaby.

Student Learning Commons services and support for students downtown are co-ordinated through Belzberg Library. <http://learningcommons.sfu.ca>.

Library Cards: The student identification card serves as library card; it is issued to Vancouver campus students enrolled in credit courses by Registrar and Information Services. Students in credit-free courses at the Vancouver campus may request a library card from the Belzberg Library. Cards for external users are available for an annual fee.

Textbooks: All downtown credit and credit-free course textbooks are sold from a branch of the SFU Bookstore located at Simon Fraser University Vancouver.

## Academic Computing Services

### Royal Bank Instructional Computing Facility

778.782.5030 Tel, 10 am – 10 pm Monday to  
Thursday, 10 am – 7 pm Friday, 10 am – 12 noon,  
1 pm – 5 pm weekends,  
www.vancouver.sfu.ca/mecs/labs.htm

### Senior Systems Consultant

M. Jutras

The Royal Bank Instructional Computing Facility at Simon Fraser University Vancouver has five well-equipped teaching labs and a drop-in centre that may be used by Simon Fraser University students, faculty and staff in support of the academic and professional development programs offered at the downtown campus. When the teaching labs are not being used for scheduled classes or tutorials they are available for drop-in use. All users must be part of the University community and are required to have a valid Simon Fraser University computing account (e-mail account) or an authorized provisional account.

IBM Labs (North and South): 17 machines, 7th floor lab: 31 machines. All are equipped with Dell Optiplex GX 620 3.2 GHz Pentium IV microcomputers for students with one machine connected to an overhead display for use by the instructor.

Mac Annex Lab: nine Apple eMac microcomputers with Mac OS X. One Epson Perfection 1640 SU flatbed scanner, an external floppy drive, and external 250 MB zip drive also available.

#### Himie Koshevoy Publishing Lab

Located on the second floor of Simon Fraser University Vancouver, this lab has 18 Power Mac G4 microcomputers with two page color displays and CD-RW/DVD-ROM. One machine is connected to an overhead display for use by the instructor. One Epson Perfection 3200 photo flatbed scanner, an external floppy drive, and an external 250 MB zip drive are also available.

1340 Drop-in Centre: Equipped with six eMacs and 10 Dell machines with the same configuration as the other labs. This area may not be reserved.

All labs are connected to a network server, standard, large format, and color laser printer, as well as Unix and other campus network services.

## Lectures, Exhibitions and Special Events

778.782.5800 Tel, meet@sfu.ca  
www.vancouver.sfu.ca

The campus community and the general public are invited to attend the many Vancouver campus public lectures and special events. Public events are generally free but seating is limited; reservations are recommended. Please see the website for event listings. For email notification, write to maillist@sfu.ca and enter <subscribe sfuvan-info> in the subject line. For School for the Contemporary Arts programs and tickets, please call 778.782.7880.

### Teck Gallery

778.782.4266 Tel, www.sfu.ca/gallery

The Teck Gallery is located on the ground floor of Simon Fraser University Vancouver, 515 West Hastings Street, and is open during regular campus hours. The exhibitions at the Teck Gallery frequently deal with art that addresses social and environmental concerns. The Simon Fraser University Gallery located on the Burnaby campus is responsible for programming at the Teck, as well as overseeing the many artworks from the permanent collection that are displayed in the public spaces and offices at Simon Fraser University Vancouver.

## Continuing Studies

778.782.5100 Tel, 778.782.5098 Fax,  
www.sfu.ca/cstudies

Dean

(to be announced)

Continuing Studies' hallmark is the leadership role it plays in creating bridges between the University and

the community. Continuing Studies acts as a welcoming portal for the University because its programs introduce many adult, online and non-traditional learners to a university environment. Simon Fraser University offers graduate degrees, undergraduate and degree completion programs, and selected certificate programs at its Vancouver and Surrey campuses. It also offers specialized short courses, seminars, workshops and conferences developed from University and community resources.

Participants in the latter category are not required to be formally admitted to the University, although some programs have their own admission requirements. As a rule, there are no examinations and no university credit is awarded. In every other way these programs meet the high standards of university level instruction.

The University awards certificates for selected credit-free programs that have been approved by senate and meet specific criteria, including a minimum of 120 contact hours and formal evaluation.

Programs are held during the day, evening and on weekends. They are taught by faculty from the University, business, the arts and the professions.

For detailed information, or to enquire about in-house programs which can be developed for companies and organizations, see the *Continuing Studies* section, or call Continuing Studies at 778.782.5100.

## Research Institutes

The following institutes and centres are based at the Vancouver campus. Consult the Calendar index (see "Index" on page 479) to locate further details about these organizations.

- Canadian Centre for Studies in Publishing
- Centre for Applied Research in Mental Health and Addiction
- Centre for Policy Studies on Culture and Communities
- Centre for Policy Research on Science and Technology
- Centre for Public Policy Research
- Centre for Research on Violence Against Women and Children
- Centre for Sustainable Community Development
- Children's Health Policy Centre
- CIBC Centre for Corporate Governance and Risk Management
- CMA Centre for Strategic Change and Performance Measurement
- Centre for Dialogue
- Gerontology Research Centre
- Health Research and Methods Training Facility
- Human Security Report Project
- Institute for Critical Studies in Gender and Health
- Institute for the Humanities
- David See-Chai Lam Centre for International Communication
- Geraldine and Tong Louie Human Performance Centre
- PolyLab
- W.J. VanDusen BC Business Studies Institute
- 7th Floor Media

## TIME Centre

778.782.7970 Tel, www.sfu.ca/time

The Technology, Innovation, Marketing and Entrepreneurship (TIME) Ventures Incubator is a Simon Fraser University initiative to encourage and facilitate active interactions between the small and medium enterprise (SME) community, the technology community, and the Simon Fraser University community. The incubator's SME outreach program includes: SME Think Tank, TIME Business Centre, Milestones to Success; SME Seminar Series, Vancouver Greentech Exchange. The incubator also sponsors the Vancouver Angel Technology Network (VANTEC), Vancouver Enterprise Forum, New Ventures BC Competition, and the BC Technology Business Mentorship Program.

## Services

### Health and Counselling Centre

300 Simon Fraser University Vancouver,  
778.782.5200 Tel, www.students.sfu.ca/heal

The Vancouver campus' medical clinic is open Tuesday to Friday, 9:30 am to 5 pm (subject to change).

Physicians provide a full range of medical care for students, faculty and staff. Referrals are made for diagnostic tests, special health problems and surgical procedures. A counsellor is available, for students only, on Tuesdays and Wednesdays. All files are maintained in the strictest confidence. Drop in or make an appointment.

### Meeting, Event and Conference Services

1.866.619.6338 Tel, 778.782.7621 Fax

Simon Fraser University Vancouver is the ideal venue for conferences, meetings, seminars and special events, offering superb facilities and catering, innovative programming and professional event management across four unique buildings:

Simon Fraser University Vancouver, 515 West Hastings Street  
Segal Graduate School of Business, 500 Granville Street  
Morris J Wosk Centre for Dialogue, 580 West Hastings Street

### SFU Bookstore

Harbour Centre Mall, 778.782.5048 Tel,  
778.782.5219 Fax, www.sfu.ca/bookstore,  
hcbooks@sfu.ca

Hours are Monday to Friday 10 am – 6 pm, and Saturday 10 am – 5 pm.

The Bookstore at Simon Fraser University Vancouver carries course books for all classes offered at the Vancouver campus. The Bookstore also offers a broad range of general books and general giftware along with an assortment of insignia clothing/giftware, stationery, greeting cards, and magazines.

# Centres and Institutes

## BC Synchrotron Institute

Director: K.L. Kavanagh BSc (Qu), PhD (Cornell), 778.782.4244 Tel, 778.782.3765 Fax, kavanagh@sfu.ca, www.sfu.ca/vpresearch/centres+institutes/BCSynchrotron.html

The institute's members come from the University of BC, University of Victoria, Simon Fraser University, and University of Northern BC, BC companies, federal and provincial government laboratories in BC. The mandate is to inform the BC academic, industrial and government laboratory communities of opportunities through synchrotron radiation studies, particularly at the Canadian Light Source; to raise BC's profile nationally in research and development; and to assist in preparing BC funding applications for facilities and equipment from agencies such as CFI.

## Behavioural and Cognitive Neuroscience Institute

Interim Director: U. Ribary MSc, PhD (Swiss Inst Tech), LEEF Chair in Cognitive Neurosciences in Early Childhood Health and Development, 778.782.3791 Tel, 778.782.3427 Fax, urs\_ribary@sfu.ca

This institute fosters interdisciplinary research and training about the mind and body relationship. Building on world-renowned researchers who investigate behavioral, cognitive, sensory-motor, and neurophysiological phenomena, the BCNI focuses on broad topics such as attention, perception, language, memory and action. Our major emphases will be on using structural and functional brain imaging to better understand the underlying neurophysiology of cognitive human brain function, cognitive disability, neurological and psychiatric symptoms. The goal is to develop objective diagnostic procedures that translate into better pedagogical applications and specific cognitive, pharmacological and surgical interventional therapies. Some of the institute's main objectives are

- to understand the relationships between behavior, cognition and their neurobiological substrates
- to understand brain development and life-long plasticity of brain and behavior
- to understand the nature of the deficits and spared capacities that are specific to particular syndromes and developmental disorders
- to develop diagnostic markers that can be related and translated into specific cognitive pharmacological and surgical interventions
- to co-ordinate initiatives to secure world-class collaborative neuroscience research tools and facilities among BC universities and hospitals

The institute provides a matrix to further facilitate scientists working synergistically toward these and related goals across disciplines and institutions.

## Evolutionary and Behavioural Ecology Research Group

Director: B.D. Roitberg BSc (S Fraser), MSc (Br Col), PhD (Mass), 778.782.3585 Tel, 778.782.3496 Fax, roitberg@sfu.ca, www.sfu.ca/biology/berg

The research group was formally established in 1989 to pursue basic research in behavioral ecology; to maintain and develop an internationally recognized student training centre in behavioral ecology, and related areas of inquiry; and to provide a service to government, industry and others to tackle basic and applied problems in behavioral ecology through collaborative research. Members are drawn from the Departments of Biological Sciences, Psychology, and the School of Resource Management.

## Bill Reid Centre for Northwest Coast Art Studies

Director: G. Macdonald BA (Tor), PhD (Yale), LLD (Calg), OC, 604.682.3455 Tel, 604.682.3310 Fax, gmacdonald@billreidfoundation.org

The centre's objective is to promote understanding of the history and principles of Northwest Coast Indigenous art through research and connoisseurship, and to promote its application to contemporary art and design in British Columbia with special reference to the interests of Indigenous Peoples. The centre provides a meeting place for students and scholars of diverse backgrounds, and serves as a virtual access portal for Native community centres, museums and academic departments around the world.

## Canadian Centre for Studies in Publishing

Director: R.M. Lorimer BA, MA (Manit), PhD (Tor), 778.782.5240 Tel, 778.782.5239 Fax, ccsp-info@sfu.ca, www.ccsp.sfu.ca

This centre was established in 1987 to pursue the study of publishing and to serve the research and the information needs of the publishing industry. The CCSP engages in basic research into the history, management, technology and policy issues related to the industry. Projects are initiated by the CCSP and undertaken under contract to, or by means of grants from industry, government and granting agencies. The research of the CCSP involves faculty, graduate students and independent researchers from a variety of disciplines. From time to time, the CCSP publishes monographs and reports on the theory and practice of publishing and sponsors seminars, conferences and professional development courses.

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### Centre for Applied Research in Mental Health and Addiction

Director: J. Somers BA (S Fraser), MSc, PhD (Wash), 778.782.5148 Tel, 778.782.7768 Fax, info@carmha.ca, www.carmha.ca

CARMHA develops knowledge and practices that enhance the effectiveness, efficiency, and quality of mental health and addiction resources. It promotes innovation, accountability, and inclusiveness to improve mental health and reduce substance use problems. Recent major projects focus on housing, telehealth, primary healthcare, corrections population, workplace mental health, Aboriginal people within the justice system, assertive community treatment, cognitive behavioral therapy, dementia and identifying gaps in mental health and addictions services.

### Centre for Coastal Studies

Director: P. Gallagher BSc, BEd (Br Col), PhD (S Fraser), 778.782.4653 Tel, 778.782.3851 Fax, patricia\_gallagher@sfu.ca, www.sfu.ca/cstudies/science/coastal.htm

The centre promotes interdisciplinary research, education and dialogue about Canada's coastal ecosystems, particularly in British Columbia. By linking social and natural science with local knowledge, the centre focuses on marine conservation, diversification of coastal economies, and capacity for resource management. Activities include collaborative research involving universities, industry, communities, First Nations, NFOs and governments; public education; programs and projects that enhance capacity building and information sharing. The centre's meeting and office space are provided for interdisciplinary networking and a location for visiting researchers.

### Centre for Comparative Study of Muslim Societies and Cultures

Director: D.N. MacLean BA (NY State), MA, PhD (McG), 778.782.4437 Tel, 778.782.5837 Fax, ccsmsc@sfu.ca, www.sfu.ca/ccsmsc

The centre facilitates the academic discussion and public understanding of the cultures and societies of past and present Muslim peoples. By focussing on diversity, the centre encourages the shift in analysis from a single religious ideascap defined by Islam to a more complex view of Muslims as agents in the construction of their own history. It sponsors Muslim studies conferences, workshops, public lectures, visiting scholars, international exchange, library augmentation, and language acquisition.

### Centre d'études Québec-Pacifique

Director: C. Guilbault BA, MA (Laval), PhD (Alta), 778.782.6783 Tel, 778.782.5932 Fax, guilbault@sfu.ca, www.sfu.ca/french/cefqp.html

This is a research and documentation centre for gathering and disseminating information relating to French literature, culture and language of the Pacific region, as well as interdisciplinary research in literature, sociolinguistics, cinema and culture. It supports and sponsors conferences, colloquia and visiting speakers. As the only research centre of its kind west of the Rockies, it's activities and programs focus on the distinct culture of BC and Pacific Rim French speakers. It also acts as a liaison between the Centre d'études Québécoises (CETUQ) of the University of Montreal and the Pacific Region.

### Centre for Dialogue

Director: M.L. Winston BSc, MA (Boston), PhD (Kansas), 778.782.7894 Tel, 778.782.7892 Fax, dialogue-info@sfu.ca, www.sfu.ca/dialogue

Established in March 2002, the centre promotes dialogue inside and outside the University through

applied, theoretical, and collaborative research, education and professional development and teaching. It brings together community leaders and organizations, faculty members from Simon Fraser University and beyond, and undergraduate and graduate students to explore dialogue as a discipline and its application in solving complex problems. The centre focuses on the relationship of dialogue and negotiation, on dialogue around foreign affairs issues such as war, environment, trade and immigration, on responding to local communities' needs for specific kinds of dialogue, first to relieve rising tensions and then to open possibilities of changing relationships. Within British Columbia, dialogues about the relationship of aboriginal and non-aboriginal futures are of continuing interest. The centre is guided by the Centre for Dialogue steering committee and is currently chaired by M. Winston, Director, Undergraduate Semester in Dialogue; Fellow, Morris J. Wosk Centre for Dialogue; Professor, Department of Biological Sciences.

### Centre for Disability Independence Research and Education

Director: J.A. Hoffer BS (Mudd), PhD (Johns H), 778.782.3141 Tel, 778.782.3040 Fax, cdire@sfu.ca, www.sfu.ca/cdire

This centre provides a site where persons with physical disabilities can meet with researchers and jointly analyze, conceive, develop and test innovative solutions for improved performance of activities of daily living and for other unmet needs. This unique setting encourages participation and knowledge transfer by people with physical disabilities, researchers, undergraduate and graduate students, educators, clinicians and health professionals from British Columbia and beyond.

### The Centre for Education, Law and Society

Director: W. Cassidy BA, MEd (S Fraser), PhD (Chic), 778.782.4484/4203 Tel, cassidy@sfu.ca, www.cels.sfu.ca, www.lawconnection.ca (website for teachers)

The centre was established in 1984 and given formal approval by the Board of Governors in 1994. Its central purpose is to improve the legal literacy of children and young adults through a program of research, teaching, curriculum development, and community initiatives. Law-related education encompasses: an understanding of law, its role in society and impact on the individual; the relationship between law and governance/citizenship/democracy; issues relating to social justice and fundamental human rights; conflict and dispute resolution; school law, policies, procedures and culture. CELS works primarily with teachers and prospective teachers, school administrators, and educational and legal organizations to help fulfil its mandate. Projects include: research into cyber-bullying; support for a school for high risk youth; investigating the ethics of care and justice in school settings; inquiry into aboriginal knowledge and perspectives in education; case studies on environmental law; a website for teachers on current legal issues; assessing students' understanding of human rights, citizenship, identity and sustainability. Projects vary from year to year, depending on the needs of the educational community, the centre's priorities, and the ability to obtain external funding. Three undergraduate courses and one graduate course in law education have been developed and are offered on a regular basis through the Faculty of Education. The three undergraduate courses also are available through the Centre for Online and Distance Education. The centre attracts a number of graduate students interested in human rights, social justice, citizenship education, the ethics of care, and school culture.

### Centre for Education Research and Policy

Director: J. Friesen BA (Br Col), MA, PhD (Tor), 778.782.4575 Tel, 778.782.5336 Fax, kowallis@sfu.ca, www.sfu.ca/~cerp

This centre (CERP) co-ordinates the activities of interdisciplinary researchers who are interested in education policy in British Columbia. The centre examines the academic consequences of various aspects of education policy, including assessment and accountability frameworks, school and program choice, and funding levels. In addition to looking at academic outcomes, the centre measures the effects of these policies on geographic segregation, social interactions and inter-group attitudes, and will emphasize the interactions between distinct ethnic and linguistic groups, including off-reserve aboriginal students and communities.

CERP includes social scientists from economics, education, psychology and public policy who have expertise in quantitative, qualitative and experimental methods. CERP is committed to working in partnership with students, parents, educators, administrators and community organizations province-wide to generate high-quality research that informs and enriches public debates about education policy, locally, nationally and internationally.

### Centre for Experimental and Constructive Mathematics

Director: M.B. Monagan BSc (Massey), MMath, PhD (Wat), 778.782.5617/4279 Tel, 778.782.5614/4947 Fax, mmonagan@cecm.sfu.ca, www.cecm.sfu.ca

The centre furthers research and graduate education in computation in the mathematical sciences.

The centre's activities include: participation in the training of graduate students in experimental and computational mathematics; provision of post doctoral fellowships in areas related to experimental and constructive mathematics; sponsorship of regular short term and long term research visitors to the centre; organization of regular colloquia and occasional conferences on advances in experimental and computational mathematics; providing access to computing resources and mathematical software packages (currently Maple and Magma); provision of tutorials and consulting assistance for faculty and graduate students at Simon Fraser University in the use of the centre's software and other computer algebra systems; establishment, development and maintenance of accessible software archives; collaboration with similar centres and appropriate individuals at other Canadian and foreign universities. Such collaboration may include co-sponsorship of speakers, workshops and visitors, joint application for external research funds, exchange of software and expertise, establishment of a Canadian mathematical computation network.

Subject to the director's approval, membership is open to Simon Fraser University faculty, and post-doctoral and graduate students who are active in mathematical computing. Associate membership will be available to faculty at other universities.

### Centre for Forensic Research

Co-directors: M.F. Skinner BA (Alta), PhD (Camb), 778.782.4171 Tel, 448.782.5666 Fax, mskinner@sfu.ca, G.S. Anderson BSc (Man), MPM, PhD (S Fraser), 778.782.3589 Tel, gail\_anderson@sfu.ca

This centre is designed to create new knowledge in the forensic sciences to solve crimes, identify human remains, determine elapsed time since death and circumstances of death on local and global scales. The core researchers specialize in entomology, bone chemistry, anthropology, DNA and botany. The centre is designed to attract researchers and students

internationally who seek a facility with well-equipped, secure laboratories and experienced colleagues to create new research initiatives arising from the challenge of cold cases, recent deaths and large scale mass disasters. The centre serves the research and day-to-day needs of law enforcement and death investigation agencies nationally and provincially. The services and product of the centre are available to all who seek an independent forensic scientific opinion.

### Centre for Global Political Economy

Director: S. McBride BSc (Lond), MA, PhD (McM), 778.782.4375 Tel, 778.782.4786 Fax, cgpe@sfu.ca, www.sfu.ca/cgpe

This centre is housed in the Department of Political Science, and involves faculty from other Simon Fraser University units to provide a focus in the field of global political economy and to win a position as an international centre for such research. This will be accomplished through external grants, high quality publications and a variety of other activities.

### Centre for Imaginative Education

Director: M. Fettes MA (Camb), MSc (Br Col), PhD (Tor), 778.782.4479 Tel, mffettes@sfu.ca

This centre seeks to nurture a new way of thinking about and practicing education, for institutions, individuals, and communities. Drawing on leading-edge research into the ways in which understanding develops, for individuals and cultures, the centre works with educators of all kinds to engage a greater range of emotions and cognitive abilities in the processes of teaching and learning. Among other outcomes of this approach, learning environments can become more inclusive and exciting places, learners gain a deeper, more lasting, and more flexible grasp of subject matter, and educators develop new skills, energy, and inspiration.

The centre co-ordinates both the Imaginative Education Research Group at Simon Fraser University, and the International Research Network on Imaginative Education, which involves researchers around the world. It also provides publications, workshops, and other materials and services to educators in the field.

### Centre for International Studies

Director: J. Harriss BA, MA (Camb), PhD (E Anglia), 778.782.7898 Tel, 778.782.7837 Fax, jharriss@sfu.ca

The centre provides a setting for students, faculty, and community members to explore the global issues in today's increasingly complex, inter-dependent and rapidly changing world. Through a comprehensive, rigorous, and focused program of studies, research efforts, and dialogue, the centre examines the most pressing international issues confronting the members of the global community. The centre's programs will explore the character and causation of various global problems, examine how such issues have been manifest in diverse regional and cultural settings, and evaluate the alternative policies that have been offered to manage or resolve existing global challenges.

While focused on the important task of analyzing and responding to challenges of the current global situation, the centre will offer practical training for the solution of major problems within and across societies, as well as developing toleration and understanding among diverse cultures.

Thus, in addition to providing a solid academic basis for the analysis of international affairs, the centre will offer exposure to a global network that links students, citizens, policy makers, members of non-governmental organizations, and academic specialists.

### Centre for Labour Studies

Director: M. Leier BA, MA (S Fraser), PhD (Nfld), 778.782.5827 Tel, 778.782.5837 Fax, tessaw@sfu.ca, www.sfu.ca/labour

The centre promotes the study and understanding of labor, working people, and their organizations from a comprehensive social, cultural, historical, political and economic perspective. The centre aims to provide a range of taught courses and programs (both credit and non-credit), offer research opportunities and assistance to both Simon Fraser University students and provincial labor organizations, and create mutually supportive and beneficial links between the academic and labour communities.

### Centre for Natural Hazards Research

Director: J.J. Clague, BA (Occidental), MSc (Calif), PhD (Br Col), PGeo, Canada Research Chair in Natural Hazards, 778.782.4924 Tel, 778.782.4198 Fax, jclague@sfu.ca, www.sfu.ca/cnhr

The Centre for Natural Hazards Research (CNHR) is an interdisciplinary and multi-departmental research facility within the Department of Earth Sciences at Simon Fraser University. CNHR conducts research on natural geophysical processes that pose a hazard to Canadians, including earthquakes, tsunamis, landslides, floods, and the impacts of climate change on the landscape and ecosystems. It is grounded in the physical sciences but conducts social and policy research on risk perception. CNHR provides graduate students with training and skills in a range of disciplines required for careers in government, academic institutions, and the private sector.

### Centre for Operations Research and Decision Sciences

Director: A. Punnen BSc (Kerala), MSc (Kanpur), PhD (IIT Kanpur), 778.782.7611/7488 Tel, 778.782.7485 Fax, apunnen@sfu.ca

This centre (CORDS) is located at Simon Fraser University Surrey. With more than 15 members from various departments such as mathematics, computing science, business, resource and environmental management, it focuses on research activities in the area of operations research — the science of optimal decision-making. Members undertake various applied research projects.

### Centre for Policy Research on Science and Technology (CPROST)

Director: R.K. Smith BA (Car), MA, PhD (S Fraser), 778.782.5116 Tel, 778.782.5239 Fax, smith@sfu.ca, www.sfu.ca/cprost

CPROST was established in 1988. Its primary research is the relationship between public policy and management of technology. The centre brings together practitioners and scholars to study the interaction of advances in science and technology, its implementation in the marketplace, and the impact on community and individual interests.

### Centre for Policy Studies on Culture and Communities

Co-directors: A.C.M. Beale BA, MA, PhD (McG), 778.782.5160 Tel, 778.782.5239 Fax, beale@sfu.ca, C.A. Murray BA, MA (Wat), PhD (Qu), 778.782.5322 Tel, 778.782.5239 Fax, murraye@sfu.ca

This centre promotes teaching, research and public outreach on cultural politics, policy and planning in communities from the local to the global, and how these support cultural practices in communities that contribute to sustainability and an inclusive society.

The centre promotes studies of policy not restricted to governments or public administration, but addressing the interaction of networks of voluntary, not-for-profit,

neighbourhood and virtual community citizen-based initiatives as well as all levels of government, private foundations, and knowledge creators and disseminators.

In 2007-2008 the centre's major research project is the 'Centre of Expertise on Culture and Communities,' a project funded by Infrastructure Canada. The project website is www.cultureandcommunities.ca

### Centre for Public Policy Research

Director: N.D. Olewiler BA (Col), MA (S Fraser), PhD (Br Col), 778.782.5289 Tel, 778.782.5288 Fax, mpp@sfu.ca, www.sfu.ca/mpp

The purpose of the centre is to promote interdisciplinary research, education, and dialogue on a broad range of public policy issues in Canada. The Centre supports and initiates research, publications, colloquia, conferences, visiting researchers and speakers, and international relationships. It is the research arm of the Public Policy Program at Simon Fraser University, complementing the master in public policy graduate degree program.

### Centre for the Reduction of Violence Among Children and Youth

Director: (to be announced)

The centre was approved by the Board of Governors on September 20, 2007. Some main objectives are to:

- inform public policy regarding pathways to violent behaviour and provide public policy recommendations or the effective allocation of limited resources
- establish training in effective and evidence-based interventions for youth and families in collaboration with stakeholders including schools, law enforcement, community, provincial and federal government ministries and other organizations
- integrate basic scientific research on risk and protective factors for violence from across Canada and abroad
- attract other researchers and funding to this important issue
- develop greater research capacity at Simon Fraser University, and increase its dissemination through publications of scientific research papers and monographs
- demonstrate the social and economic benefits of these strategies
- strengthen the knowledge economy by hosting international conferences on youth violence

### Centre for Research on Adaptive Behaviour in Economics (CRABE)

Director: J. Arifovic BA (Sarajevo), MA, PhD (Chic), 778.782.5603 Tel, 778.782.5944 Fax, arifovic@sfu.ca, www.sfu.ca/crabe

The centre's activities and program are intended to initiate and promote research related to experimental and behavioural economics, and computational methods of the study of learning, adaptation and evolution in economic environments. The centre will facilitate the conduct of faculty and student research projects by providing infrastructure for computer simulations, economic experiments with human subjects and survey studies. The centre will also organize conferences, colloquia, visiting speakers' seminar series, and visiting scholar programs.

### Centre for Restorative Justice

Co-directors: E. Elliott, BPE (Ott), MSW (Car), PhD (S Fraser), 778.291.4730 Tel, 778.782.4140 Fax, B. Morrison, BA, PhD (ANU), 778.782.7627 Tel, 778.782.4140 Fax, cfjr@sfu.ca, www.sfu.ca/cfrj

The centre, in partnership with individuals, the community, justice agencies and Simon Fraser



University exists to support and promote the principles and practices of restorative justice. The centre provides education, innovative program models, training, evaluation and research through a resource centre and meeting place that facilitates outreach, promotion, dialogue and advocacy.

### Centre for Scientific Computing

Director: R.D. Russell BS, BA, MA, PhD (New Mexico), 778.782.4819 Tel, 778.782.4947 Fax, rdr@cs.sfu.ca, <http://csc.sfu.ca>

Motivated by the expanding role of scientific computation and mathematical modeling in science and engineering, the centre brings together interdisciplinary research teams from various Simon Fraser University faculties. It provides Simon Fraser University with a visible focus for computational research both on campus and in the wider Pacific Rim research community. Specifically, the centre's goals are to facilitate discussion between scientific computing research groups (through seminars, workshops, conferences) to provide advanced instruction in computational techniques and applications (through graduate and post-doctoral programs), and to actively pursue joint research ventures with industry, government and laboratories.

### Centre for Scottish Studies

Director: L. Davis BA (Sask), MA, PhD (Calif), 778.783.4833 Tel, 778.783.5737 Fax, leith@sfu.ca, [www.sfu.ca/scottish](http://www.sfu.ca/scottish)

The centre's activities and programs promote teaching, research and community programming in Scottish studies. It supports and initiates research, publications, non-credit and credit instruction, colloquia, conferences, visiting speakers and international relationships. In the pursuit of these objectives, the centre provides support to existing individual, departmental and cross-departmental activities at Simon Fraser University in the area of Scottish studies.

### Centre for Studies in Global Asset and Wealth Management

Director: P.C. Klein BSc, LLB, MBA (WOnt), PhD (Tor), 778.782.7962 Tel, 778.782.5122 Fax, gawm@sfu.ca, [www.sfbusiness.ca/gawm](http://www.sfbusiness.ca/gawm)

The centre, which was approved by the Board of Governors on January 25, 2007, will focus on two fundamental issues with respect to financial investing. First is to address the growing need to research and assess global financial markets. Affiliated with the school's global asset and wealth management MBA program, this centre's mandate is to develop a better understanding of the ever-increasing array of global investment instruments and their suitability as client investment opportunities. The centre will complement the school's markets research and trading room, where faculty and students can use the latest technologies to access global stock exchanges and on-line financial databases to explore and evaluate the details of particular investment strategies. Increasingly we see the creation of new asset classes, such as hedge funds and boutique investments. Evaluating these new instruments, posing new instruments, and maximizing investment alternatives will be central activities of this new centre. Secondly, the centre will develop research expertise with respect to the development of investment policies to better guide advice that is given to investors. More and more investors have invested in a broad array of investment opportunities, many of which are truly global. Such investors often must deal with highly specialized issues such as complex taxation consideration, large accrued capital gains and multi-generational concerns, situations in which simple investment structures are clearly not sufficient.

What is needed are investment policies that more appropriately reflect such individualistic situations, rather than policies reflected in current investment planning, focusing on an average, stereotypical investor wherein decisions come down to selecting a debt/equity mix and little else.

The centre will marshal the academic resources for undertaking such advanced research and analytical capabilities. These academic resources would include researchers affiliated with the centre, visiting research fellows, and an affiliated PhD stream, as well as inter-institutional research linkages.

### Centre for Studies in Print and Media Cultures

Director: E.A. Schellenberg, BEd, BA (Winn), MA, PhD (Ott), 778.782.3095 Tel, 778.782.5737 Fax, schellen@sfu.ca, [www.sfu.ca/~mevorton/cspmc.htm](http://www.sfu.ca/~mevorton/cspmc.htm)

This centre was established to encourage cross-disciplinary research and exchange in the fields of print culture, media cultures in general communications technologies, the arts, and the public sphere. Current faculty members of the centre are from the departments and schools of communication, contemporary arts, English, history, interactive arts and technology, linguistics, the library, and political science. We welcome anyone in related areas of research to join us.

### Centre for the Study of Educational Leadership and Policy

Director: D.A. Laitsch BA (VPI&SU), MEd (Virginia), PhD (American DC), 778.782.7589 Tel, 778.782.8119 Fax, dlaitsch@sfu.ca, <http://www.cselp.ca>

CSELP focuses on research that supports the advancement and improvement of K-12 and post-secondary education in British Columbia. The centre's mission is to use a variety of academic and distributive resources to expand the public policy knowledge base and its role in developing leadership capacity. The centre strengthens communicative networks between researchers, policy makers, practitioners and the public to increase the power of research to inform the work of each constituent group. CSELP seeks to become the premier source for ideas, resources, and practices in educational leadership and policy in BC and Canada.

### Centre for Sustainable Community Development

Director: M.L. Roseland, BA, MA (Wesleyan, Conn), PhD (Br Col), 2100 East Academic Annex, 778.782.5849 Tel, 778.782.5473 Fax, cedadmin@sfu.ca, [www.sfu.ca/cscd](http://www.sfu.ca/cscd)

Sustainable community development integrates economic, social and environmental objectives in community development. Sustainable community development is based on a consideration of the relationship between economic factors and other community elements such as housing, education, the natural environment, health, accessibility and the arts. SCD has emerged as a compelling alternative to conventional approaches to development, a participatory, holistic and inclusive process that leads to positive, concrete changes in communities by creating employment reducing poverty, restoring the health of the natural environment, stabilizing local economies, and increasing community control.

Simon Fraser University's Centre for Sustainable Community Development (CSCD), formerly the Community Economic Development Centre, was founded in 1989. The centre's mission is to support the sustainable development of communities through education, research and community mobilization. It provides research, training and advisory services

throughout BC and Canada as well as internationally. The CSCD offers an undergraduate certificate and post-baccalaureate diploma (also available through distance education), graduate support, and a non-credit professional program.

### Centre for Tourism Policy and Research

Director: P.W. Williams BA (Ott), MA (Wat), PhD (Utah State), 778.782.3103 Tel, 778.782.4968 Fax, peter\_williams@sfu.ca, [www.sfu.ca/~dossa](http://www.sfu.ca/~dossa)

This centre is housed within the School of Resource and Environmental Management. The school plays a leading role in managing the operation of the centre. The centre provides academic counsel to graduate students, supports the delivery of professional development seminars and workshops, and conducts tourism policy and planning research projects for public and private sector tourism organizations.

### Centre for Wildlife Ecology

Director: R.C. Ydenberg BSc (S Fraser), DPhil (Oxf), 778.782.4282 Tel, 778.782.3496 Fax, constans@sfu.ca, [www.sfu.ca/biology/wildberg](http://www.sfu.ca/biology/wildberg)

The centre fosters high quality, graduate training and research, conducts basic and applied research in wildlife ecology, and provides knowledge and personnel that will help Environment Canada and other agencies meet conservation challenges in the 21st century. The central concept is to foster synergy between mission-oriented research and management policies of the Canadian Wildlife Service and the basic research agenda of Simon Fraser University.

### Chemical Ecology Research Group (CERG)

Director: G.J. Gries Diplom, PhD (Gött), 778.782.4392 Tel, 778.782.3496 Fax, gries@sfu.ca, [www.sfu.ca/chemistry/Research/cERG.html](http://www.sfu.ca/chemistry/Research/cERG.html)

This association of research groups, established in 1981 as a regional graduate and post graduate chemical ecology training centre, offers a service to government and industry; to isolate, identify and synthesize semiochemicals; to clone, express and study enzymes involved in the perception and biosynthesis of semiochemicals; to study interactions between organisms mediated by semiochemicals; and to develop practical semiochemicals applications.

### Children's Health Policy Centre

Director: C. Waddell BSc, MSc (Br Col), MD (McM), 778.782.7769 Tel, 778.782.7777 Fax, chpcom@sfu.ca, [www.childhealthpolicy.sfu.ca](http://www.childhealthpolicy.sfu.ca)

Located in the Faculty of Health Sciences at Simon Fraser University, we are an interdisciplinary research group dedicated to integrating research and policy to improve children's health. We primarily focus on children's social and emotional development, or children's mental health, as one of the most important investments that any society can make.

We conduct research on the policy process and research relevant to inform policy-making: addressing determinants of health; preventing problems in children at risk; promoting effective programs and services; and monitoring our collective progress towards improving the lives of all children. Reciprocal relationships with government and community groups in turn inform our research.

We provide education in health policy, children's mental health and population health. As well, we provide service: to the research community in the form of consultation on the policy process; and to the wider community in the form of consultation to government and public advocacy groups concerned with children's health. Our work supports and complements the vision of the Faculty of Health Sciences to integrate research and policy for public and population health locally, nationally and globally.

### CIBC Centre for Corporate Governance and Risk Management

Director: M. Parent BCom, MBA, PhD (Qu),  
778.782.5214 Tel, 778.782.5153 Fax,  
mparent@sfu.ca, www.sfu.ca/cibc-centre

The centre provides innovative, interdisciplinary and collaborative research on current topics and issues in corporate governance and risk management. The centre's mandate focuses on the nature and effects of good corporate governance and the relationship between corporate governance and strategic, financial, technical, ethical and social risk. The centre facilitates and disseminates research through its own research program including the research of its director, executive director, fellows and research associates. The centre also has a mandate to engage relevant stakeholders through seminars, public dialogues, conferences, visiting scholars and the centre's website. The centre has an international rather than only national focus. In executing on this mandate, the centre fosters national and international collaboration among various scholars and practitioners in the area of corporate governance stakeholders including other academic centres dealing with corporate governance and risk management issues.

### CMA Centre for Strategic Change and Performance Measurement

Director: T.B. Lawrence BComm, PhD (Alta),  
778.782.5154 Tel, 778.782.5153 Fax,  
tom\_lawrence@sfu.ca, www.sfu.ca/cma-centre

The purpose of the centre is to promote research and knowledge dissemination about how organizations plan and execute strategic change, and how best to measure the performance of organizations undergoing such change. Funded by the Certified Management Accountants (CMA) of Canada, the centre will conduct research into three broad yet highly interrelated themes: strategic change and the execution of strategic change, appropriate measurements for the evaluation of the performance of such changes, the evolution of organizations undergoing rapid change.

### Co-operative Resource Management Institute

Director: A.S. Harestad BSc, MSc, PhD (Br Col),  
778.782.4809 Tel, 778.782.4968 Fax,  
dallaway@sfu.ca, www.rem.sfu.ca/crmi

This institute on the Burnaby campus, houses personnel from natural resource management agencies. It facilitates solutions to difficult multidisciplinary issues in resource management by providing an environment where personnel from different management agencies such as forestry, fisheries, and wildlife can work side-by-side along with Simon Fraser University faculty, graduate students, post-doctoral fellows, and research associates on a daily basis. The university benefits from greater concentration of expertise in resource management on campus and from new opportunities for multidisciplinary, collaborative research programs.

### Criminology Research Centre

Director: W.G. Glackman BA (Calif), MA,  
PhD (S Fraser), 778.782.5352/4041 Tel,  
778.782.4140 Fax, crc@sfu.ca, www.sfu.ca/crc

This centre was established in 1978 to facilitate criminological research by faculty and graduate students. Funds to establish and maintain the centre were provided by the Solicitor General of Canada for the first 15 years of operation. Since then, grants and contracts obtained by School of Criminology faculty from provincial, federal and private sources have maintained the centre at a minimal level. Currently, the centre operates largely as an administrative unit for external funding received by faculty of the school.

Funding for the administrator's salary is derived from these sources. As well, a modest library is maintained for the Simon Fraser University community.

### David See-Chai Lam Centre for International Communication

Director: T.A. Perry BA (Wabash), PhD (Indiana),  
778.782.3913 Tel, 778.782.5112 Fax,  
dlam-info@sfu.ca, www.cic.sfu.ca

This interdisciplinary centre, which began in 1989, integrates university, government, professional and business resources for research, education, development and community outreach. It focuses on international, intercultural, and interlingual communication in Canada and overseas, with emphasis on the people and institutions of the Pacific Rim. Activities include international and intercultural communication research and development projects, Chinese, Japanese and other East Asian culture, language and communication courses, cross-cultural management and communication seminars, and the Pacific Region Forum on Business and Management Communication.

### David Wheeler Institute for Research in Mathematics Education

Co-directors: S.R. Campbell, P. Liljedahl, N. Sinclair,  
R. Zazkis, 778.782.3662/4370 Tel, zazkis@sfu.ca

This Simon Fraser University research group integrates humanistic and scientific approaches in different areas related to mathematics education. The institute's mission is to generate and share knowledge about acquiring mathematical literacy and understanding at all ages and to advance humanity by enriching the lives and options of learners. Current research projects focus on mathematics teacher education in both cognitive and affective domains, on mathematical anxiety, on aesthetics of mathematical experience, and on uses of computer technology that promote learning and teaching.

The centre also advances knowledge about the learning of mathematics, and situating this knowledge within the lived experiences of learners by drawing on international expertise in a variety of research initiatives. Through community outreach in real world settings, we promote effective change that meets the needs of students, teachers, parents, and the community. Our outreach programs provide a platform for conducting classroom research and for implementing research results in practice through ongoing collaboration among researchers and teachers and school districts, as well as the creation of partnerships with families, administrators, and policy makers who will benefit from our research.

### Feminist Institute for Studies on Law and Society

Co-directors: D.E. Chunn BA (Br Col), MA, PhD (Tor),  
778.782.4761 Tel, chunn@sfu.ca, W. Chan BA (Car),  
MA (Sheff), PhD (Camb), 778.782.4761/4469 Tel,  
778.782.5799 Fax, fisl@sfcu.ca

Established in 1990, this Simon Fraser University institute facilitates and continues the development of feminist analyses on law and society; facilitates creative interaction among scholars and community representatives who are involved in its work locally, nationally and internationally; and bridges gaps between legal and social science research.

### 4D LABS

Executive Director: N.R. Branda, BSc, PhD (MIT),  
778.782.8158 Tel, 778.782.3765 Fax,  
info@4dlabs.ca, www.4dlabs.ca

4D LABS was formed to foster fundamental university research in the areas of advanced materials and nano-scale devices. A multidisciplinary team of leading researchers will work to design, develop and

demonstrate prototype devices that can lead to major advances in information and health technologies.

4D LABS integrates an international research team of chemists, physicists and engineers with expertise in nanomaterials engineering and devices. This team leads the transformation from traditional electronic information processing systems to new technology platforms. Each team member is internationally recognized and has a proven track record. Team specializations include functional molecules, functional solid state materials, surface chemistry and modification, electrochemistry, fabrication methods, lithography, polymers, biomaterials, materials characterization, theoretical chemistry and physics.

### Gerontology Research Centre

Director: A. Sixsmith BA, MA (Keele), PhD (Lond),  
778.782.5065 Tel, 778.782.5375 Fax, gero@sfu.ca,  
www.sfu.ca/grc

Established in 1982, the centre promotes and conducts innovative interdisciplinary research on topics relating to individual and population aging, serves as an information clearing house, and provides consultation and technical assistance to the academic community, government, public and private organizations. The centre houses a specialized collection of research materials, maintains an active publications program, organizes workshops and conferences, and is a contributing member of two inter-university research consortia. Research activities focus on applied gerontology with concentrations in: aging and the built environment; health promotion/population health and aging; prevention of victimization and exploitation of older persons; changing demography and lifestyles; and culture and aging. The associated Department of Gerontology offers a post baccalaureate diploma in gerontology, a minor, and a master of arts degree and a PhD degree.

### Institute for Canadian Urban Research Studies

Director: P.L. Brantingham AB (Col), MA (Fordham),  
MSP, PhD (Florida State), 778.782.3515 Tel,  
778.782.4140 Fax, pbrant@sfu.ca

The institute is intended to further multidisciplinary research on urban issues. Its objectives are: to provide a focus for research about urban problems and issues in Canada; to promote interdisciplinary collaboration and research; to provide an institutional focus for international scholarship concerning urban problems; to provide a facility in which data for the study of urban problems can be collected, catalogued, and made readily accessible through modern data management; to provide a facility in which research and techniques can be made available to those having a responsibility for policy.

The focus has evolved into an emphasis on public urban safety and security as well as vulnerability and risk. This focus is supported with memoranda of understanding (MOU) between Simon Fraser University and several government ministries. The primary university/government MOU is with the Ministry of Public Safety and the Solicitor General including a formal research protocol with "E" Division of the RCMP. Under this MOU, ICURS engages in developing innovative and evidence-based approaches to advancing public safety research in general and crime reduction in particular.

### Institute for Critical Studies in Gender and Health (ICSGH)

Co-directors: O.A. Hankivsky BA (Tor), MA,  
PhD (WOnt), 778.782.5182 Tel, M.H. Morrow BA  
(Br Col), MA, PhD (Tor), 778.782.6906 Tel,  
778.782.5288 Fax, oah@sfu.ca/mmorrow@sfu.ca,  
www.sfu.ca/~icsgh/

This institute anchors a vibrant interdisciplinary community of over 30 scholars, researchers and students. Its objectives and foci support the University's strategic research plan in the areas of i) health, genomics and physiological sciences and ii) history, culture, social relations and behavior. The ICSGH complements the Faculty of Health Sciences and the Institute for Health Research and Education, which seek to integrate social and natural science research with population outcomes, societal application, and policy analysis. The ICSGH will also play a key role in the Faculty of Arts and Social Sciences which has identified health and public policy as a priority research area.

Each year, the institute will identify a key research area that will be supported through seminars devoted to directed readings, public lectures, and an annual conference. Annual conferences will bring together local, national and international scholars, activists, and practitioners from a number of disciplines and areas of research to consider conceptual and practical issues related to the institute's research mandate. Conferences will provide opportunities for discussion and debate, the development of intellectual networks and collaborative partnerships, and the chance to produce new and original research.

### Institute of Governance Studies

Director: P.J. Smith BA, MA (McM), PhD (Lond), 778.782.3088 Tel, 778.782.4293 Fax, igs@sfu.ca, psmith@sfu.ca, www.sfu.ca/igs

This institute furthers research on governance issues. Specifically, its objectives will include the following.

- to provide research focus on Canadian governance at the municipal, regional/metropolitan, provincial and federal levels, in comparative domestic and aboriginal systems and in the emerging global order
- to promote collaboration and research on issues of governance among scholars in a variety of disciplines located at Simon Fraser University
- to promote an institutional focus for international scholarship concerning issues of governance.
- to provide a forum within the Vancouver metropolis, BC and Canada to present and disseminate research and ideas about governance issues
- to provide a facility in which data for the study of contemporary governance and related public policy can be collected, catalogued and made accessible through data management and exchange
- to provide a facility in which research and techniques are available for exchange with those having responsibility for contemporary governance

### Institute for the Humanities

Director: A.M. Feenberg-Dibon Licence d'Anglais, Diplôme d'Etudes Supérieures (Sorbonne), PhD (Calif), 778.782.3763 Tel, 778.782.5788 Fax, graham@sfu.ca, www.sfu.ca/humanities-institute

This institute provides support to develop humanities programs and humanities concepts which already exist throughout the University. The institute explores and disseminates knowledge about traditional and modern approaches to the humanities, and explores critical perspectives that relate social concerns to the cultural and historical humanities legacy. The institute, which is affiliated with the Department of Humanities, initiates conferences, seminars, projects and publications in interrelated humanities fields and social sciences for the University and the community.

### Institute of Micromachine and Microfabrication Research

Director: M. Parameswaran BE (Madr), MSc, PhD (Alta), 778.782.4971 Tel, 778.782.4951 Fax, param@sfu.ca, www.sfu.ca/immr

This institute will stimulate, encourage and enhance micromachining and microfabrication research by

providing a focus and resource base for collaborative and multidisciplinary research leading to new processes and new devices of benefit across a wide array of disciplines.

### Institute for Research on Early Education and Child Health

Director: M.J. Hoskyn BHE, MA (Br Col), PhD (Calif), 778.782.5808 Tel, 778.782.3203 Fax, reach@sfu.ca, www.educ.sfu.ca/reach

REACH is a multidisciplinary Simon Fraser University research group whose mission is to generate and share knowledge about child health and education to advance humanity by enriching the lives of young children and their families. Current research projects focus on young children from infancy to eight years of age and the communities in which they live. We advance knowledge about the interplay between biology and environmental experiences that influence child health, psychosocial development and learning. Through community outreach in real world settings, we promote change that favors children in early education and public policy at local, national and international levels. We believe that effective research focuses on the child and the child's rights, advances theory, and defines the learning environments that promote child health and family well-being. An important part of this process is ongoing collaboration among researchers and the creation of partnerships with families, health-care professionals, educators, administrators, advocacy groups, and policy makers who will potentially benefit from our research.

We believe that effective research focuses on the child and the child's rights, advances theory, and defines the learning environments that promote child health and family well-being. An important part is ongoing collaboration among researchers and partnerships with families, health-care professionals, educators, administrators, advocacy groups, and policymakers who will benefit from our research.

### Institute for Studies in Criminal Justice Policy

Director: D. MacAlister BA, MA (S Fraser), LLB (Br Col), LLM (Qu), 778.782.3019 Tel, 778.782.4140 Fax, dmacalis@sfu.ca, www.sfu.ca/criminology/research/index.html

The institute was established with the initial support of the Donner Canadian Foundation in 1980. The purpose of the institute is to contribute to the examination of criminal justice policy by providing a setting in which academics, justice system personnel and members of the community can assemble to apply scholarly research to policy development and analysis. The institute undertakes projects on its own initiative as well as under contract.

### Institute for Studies in Teacher Education

Director: P.P. Grimmett BA (Newcastle, UK), BEd (Keele), MA, MEd (Alta), EdD (Br Col), 778.782.4937 Tel, 778.782.3203 Fax, grimmett@sfu.ca, www.educ.sfu.ca/iste/index.html

The general aim of the institute is to promote and carry out research in the area of teacher education. It also seeks to develop collaborative links with groups within and outside the university community.

### Institute for the Study of Teaching and Learning in the Disciplines

Director: C.L. Amundsen BA (Wash), MEd (Alaska), PhD (Montr), 778.782.4853 Tel, 778.782.3203 Fax, camundsa@sfu.ca

The institute's primary purpose is to inspire, support and enhance faculty-led inquiry into all aspects of teaching and learning at the University. Faculty-led

inquiry is discipline-focused, initiated by individual faculty members or groups of faculty, and related to questions about teaching and learning specifically of interest to faculty. Two aspects of the Institute will be primary in supporting faculty-led inquiry:

- faculty-led inquiry projects: funds will be made available through the institute for faculty-led inquiry that adheres to specific criteria. The findings will be made public, through both informal University presentations and publications and more formal external presentations and publications.
- faculty teaching scholars: these faculty members serve as the institute's core membership. Committed to further developing knowledge of teaching and learning processes in their respective disciplines, they work with other faculty who are interested in development through institute-sponsored projects.

### Interdisciplinary Research in the Mathematical and Computational Sciences (IRMACS)

Project Leader and Executive Director: P.B. Borwein BSc (WOnt), MSc, PhD (Br Col), 778.782.4376 Tel, Managing Director: P. Borghardt, 778.782.6989 Tel, 778.782.7064 IRMACS Tel, 778.782.7065 Fax, irmacs@irmacs.sfu.ca, www.irmacs.sfu.ca

The IRMACS Centre is a unique, interdisciplinary research facility that enables collaborative interaction — intellectually, physically and virtually. IRMACS removes traditional boundaries between scientific disciplines and creates a stimulating environment for researchers. It provides a versatile, computationally sophisticated infrastructure for nearly 300 scientists whose primary laboratory tool is the computer.

The centre encourages creative communication and idea exchange. The configurable, open research facility incorporates a diverse community of scientists, research associates, visitors and students, in a flexible manner. Whether on-site or around the world, IRMACS researchers enjoy expert technical support and state-of-the-art computation, visualization and communication resources. The centerpiece of the centre is its presentation studio, seating up to 100 people. It is a state-of-the-art audio-visual environment including a high-resolution 3D projection system. It forms part of a global network of AccessGrid video-conferencing rooms. The flexible meeting rooms and presentation studio are configured to facilitate distance collaboration in seminars, lecture series, workshops, medium-size research conferences and related activities.

### International Centre of Art for Social Change

Co-directors: C. Snowber BA (SWMass), MA (Gordon-Cornwell), PhD (S Fraser), celeste@sfu.ca, J. Marcuse LLD (S Fraser), Judith@jmrprojects.ca, 778.782.8559 Tel, 778.782.5098 Fax, www.ICASC.ca

Judith Marcuse Projects and Simon Fraser University (with Continuing Studies and the Faculty of Education) have established this centre, which will be a nexus for skills training, professional development, local and international networking, research and community engagement — all aimed at advancing best practices in the field of art for social change.

### International Centre for Criminal Law Reform and Criminal Justice Policy

President: D.C. Préfontaine BA (Rockhurst), LLB (Sask), LLM (Missouri), QC; Acting/Executive Director: K. Macdonald, 604.822.9875 Tel, 604.822.9317 Fax, icclr@law.ubc.ca, www.icclr.law.ubc.ca

This international centre was established in 1991 in Vancouver, BC, by its founding charter members

Simon Fraser University, the University of British Columbia and the International Society for the Reform of Criminal Law. The centre is formally affiliated with the United Nations and functions as one of two inter-regional UN affiliates of the United Nations Crime Prevention and Criminal Justice Program. The centre's mandate promotes human rights, the rule of law, democracy and good governance. To fulfil its mandate, the centre co-operates closely with other members of the United Nations Crime Prevention and Criminal Justice Network of Institutes, as well as federal and provincial governments.

### International Cybercrime Research Centre

Director: W.G. Glackman BA (Calif), MA, PhD (S Fraser), RPsych, 778.782.4041 Tel, 778.782.4140 Fax, [crc@sfu.ca](mailto:crc@sfu.ca)

The International Cybercrime Research Centre (ICRC) is a focal point for collaboration among cybercrime researchers from universities, government agencies, NGOs, and private sector organizations. Current projects are concerned with economic crime, pornography, child exploitation and terrorism, among other issues.

### Logic and Functional Programming Group

Director: V. Dahl MSc (Buenos Aires), PhD Aix-Marseilles I, Dipl d'Et App Aix-Marseilles II, 778.782.3426/3372 Tel, 778.782.3045 Fax, [lf@cs.sfu.ca](mailto:lf@cs.sfu.ca), [www.cs.sfu.ca/research/groups/Logic-Functional.html](http://www.cs.sfu.ca/research/groups/Logic-Functional.html)

This group was established in 1990 under Simon Fraser University's policy AC-35 to facilitate research on the theory and applications of declarative programming (in particular logic programming, and function programming, constraint logic programming and logic grammars). It is strongly interdisciplinary comprising several Simon Fraser University members from several SFU units (computing science, linguistics, mathematics, engineering science), and two University of BC units (linguistics, computing sciences), University of Victoria, Université de Provence, Roskilde University, Trinity Western University, ILOG in France, and University of Dallas.

The group furthers state-of-the-art theoretical and practical aspects of developing declarative programming tools, at investigating the uses of these tools for concrete intelligent systems, and facilitating result transfers and collaborations with other academic units and industry. Members' interests include logic, functional and constraint-based programming theory and tools, natural language processing, linguistic theory automation, deductive data bases, knowledge representation, hardware design, expert systems, robotics, distributed processing, mobile code and virtual worlds, tools for molecular biology, and software for the handicapped.

### Mental Health, Law and Policy Institute

Director: R.M. Roesch BS (Arizona), PhD (Ill), 778.782.3370 Tel, 778.782.3427 Fax, [mhlpi@sfu.ca](mailto:mhlpi@sfu.ca), [www.sfu.ca/~mhlpi](http://www.sfu.ca/~mhlpi)

This institute, established in 1991, promotes interdisciplinary collaboration in mental health, law and policy research and training. Its membership is drawn from the Department of Psychology and the School of Criminology at Simon Fraser University as well as government and community agencies in Canada and internationally. The institute has received federal and provincial grants for a variety of research projects in the area of mental health and law, and also sponsors lectures and workshops. It also publishes forensic psychology books including manuals for

assessing risk for violence and recidivism and assessing mental health problems in pretrial jails.

### Nanomed Canada Research Network

Executive Director: N.R. Branda, BSc, PhD (MIT), 778.782.8061 Tel, [info@nanomedcanada.org](mailto:info@nanomedcanada.org), [www.nanomedcanada.org/home](http://www.nanomedcanada.org/home)

Nanomed Canada is a community of nanotechnology researchers (chemists, physicists, mathematicians and engineers), medical researchers (clinicians, biotechnologists, pharmacologists and geneticists), medical institutes, pharmaceutical and diagnostic companies and government organizations who share knowledge and work collaboratively to advance medical diagnostics and therapeutics. It initially focuses on cancer, cardiovascular disease and central nervous system disorders.

Canada has demonstrated research leadership in both the nano and applied side; however the two groups rarely cross paths and share knowledge. Nanomed Canada is using the Internet to create a virtual information exchange community which features on-going discussions through forum posts, weekly archived on-line presentations, membership directory, catalogue of relevant research facilities and appropriate Canadian contacts, private collaborative workrooms and social networking technologies for information exchange. It will host quarterly topically-focused meetings to develop collaborative nanomedicine research projects. Network members can access presentations and summary papers through the virtual network. Nanomed Canada presents events and presentations for non-members to attract new members. It will become an information warehouse about Canada's nanomedicine industry to match companies and researchers to facilitate technology transfer. Companies contact Nanomed Canada for recommendations about obtaining expertise from universities, and university researchers contact Nanomed Canada for a list of companies that are interested in a particular technology they have patented.

Nanomed Canada members appreciate that implementing new technologies can have a profound effect on public health. A secondary benefit of the network is its relevant expertise to help policy makers and regulatory agencies evaluate the scientific and ethical impact of new nanomedicine technologies.

### Pacific Institute for the Mathematical Sciences

Director: R. Choksi BSc (Tor), MS, PhD (Brown), 778.782.6655 Tel, 778.782.6657 Fax, [sfu@pims.math.ca](mailto:sfu@pims.math.ca), [www.pims.math.ca](http://www.pims.math.ca)

The Pacific Institute for the Mathematical Sciences (PIMS) is dedicated to promoting all aspects of the mathematical sciences by stimulating, co-ordinating and facilitating the activities of mathematical and computational scientists. This is achieved by

- promoting research in mathematical sciences areas
- initiating and promoting mathematics education at all levels: K-12 and university
- initiating collaborations and strengthening ties between mathematical scientists in the academic community and those in the industrial, business and government sectors
- training of highly qualified personnel for academic and industrial employment
- developing new technologies to support research, communication and training.

Associated with PIMS are projects of the Mathematics of Information Technology and Complex Systems NCE (MITACS). Through the strength and vitality of its programs, PIMS and MITACS are able to serve the

mathematical sciences community as a catalyst in many areas of significance: communication and dissemination of mathematical ideas through public outreach, mathematical education and training at all school levels; and creation of strong mathematical partnerships and links. PIMS involves scientists in several faculties at Simon Fraser University including the Faculties of Science, Applied Sciences, and Education. The PIMS community includes specialists in mathematics, statistics, computer science, mathematical physics, biology, chemistry, economics, operations research, management, engineering, and other fields involving mathematical methods. In addition, PIMS involves teachers in the mathematical sciences at all levels. PIMS-SFU is the Simon Fraser University representative of PIMS and shares the goals and ideals of PIMS generally while also meeting the specific needs of the PIMS/MITACS and mathematical sciences community at this University.

### Tri-University Meson Facility (TRIUMF)

Director: N.S. Lockyer BSc (York), PhD (Ohio), 604.222.1047 Tel, 604.222.1074 Fax, [finance@triumf.ca](mailto:finance@triumf.ca), [www.triumf.ca](http://www.triumf.ca)

TRIUMF is a joint venture of the University of Alberta, the University of British Columbia, Carleton University, l'Université de Montréal, Simon Fraser University, the University of Toronto and the University of Victoria.

The TRIUMF facility is based on a 520MeV cyclotron capable of producing multiple proton beams simultaneously, each at a different energy level. TRIUMF has developed a world-class facility called ISAC, which produces beams of unstable rare isotopes. Scientific research at TRIUMF includes medium energy nuclear and particle physics, astrophysics, condensed matter studies and radiochemistry for the production of radiopharmaceuticals. Applied research includes the design of small cyclotrons, microchips, controls software, and medical applications such as the use of proton beams and radioisotopes for cancer therapy.

### Western Canadian Universities Marine Sciences Society (Bamfield)

Director: B. Anholt PhD (Br Col), 250.728.3301 (extension 215) Tel, 250.728.3452 Fax, [info@bms.bc.ca](mailto:info@bms.bc.ca), [www.bms.bc.ca](http://www.bms.bc.ca)

This society was founded in 1969 with the objective of operating a major research and teaching facility in coastal and marine sciences. The Bamfield Marine Sciences Centre offers year round research facilities that enable resident and visiting scientists and students (MSc and PhD) to develop a range of research programs. Courses that lead to academic credit for undergraduate and graduate degree programs at member universities are given at the station. The centre also runs a public education program from September through April.

### W.J. VanDusen BC Business Studies Institute

Director: D.M. Shapiro BA (Calg), MA, PhD (Cornell), 778.782.4183 Tel, 778.782.5833 Fax, [dshapiro@sfu.ca](mailto:dshapiro@sfu.ca), [www.sfbusiness.ca/research](http://www.sfbusiness.ca/research)

Established to focus research efforts on issues of particular relevance to corporations and government agencies in BC. The institute brings the expertise and research acumen of the Faculty of Business Administration to the Segal Graduate School of Business where faculty and business executives have greater and more direct opportunities to work together. The institute sponsors lectures and has an executive-in-residence program to bring business leaders into the University's classroom.

# Governing Bodies and Faculty

## Convocation

Chancellor – Chair  
President and Vice-Chancellor  
Registrar – Secretary  
Members of senate  
All faculty members  
All graduates of Simon Fraser University  
All persons whose names are added to the roll of Convocation by regulations of the senate

## Board of Governors

*Expiry dates of terms of office are shown where applicable.*

## Ex Officio

Chancellor  
President and Vice-Chancellor

## Appointed by Order-in-Council

L. Brown-Ganzer, January 2010  
P. Dhillon, February 2011  
R.G. Elton, July 2009  
M. Francis, December 2011, chair  
J. McPhee, July 2011  
D. Pekarsky, January 2010  
B.E. Taylor, February 2011

## Elected by Faculty Members

P. Percival, May 2012  
J. Zaichkowsky, May 2010

## Elected by Students from the Students

A. Dhillon, May 2010  
K. Harding, May 2010

## Elected by University Employees (excluding Faculty Members)

A. Barton, May 2011

## Administrative Officers

S. Gill, Associate University Secretary and Associate General Counsel  
J.A. Osborne, Vice-President, Legal Affairs and University Secretary

## Senate

*Expiry dates of terms of office are shown where applicable.*

## Ex Officio

Chancellor  
President and Vice-Chancellor – Chair  
Vice-President, Academic  
Vice-President, Research  
Associate Vice-President, Academic  
Dean of the Faculty of Applied Sciences  
Dean of Continuing Studies  
Dean of the Faculty of Arts and Social Sciences  
Dean of the Faculty of Business Administration  
Dean of Faculty of Communication, Art and Technology  
Dean of the Faculty of Education  
Dean of the Faculty of Environment  
Dean of the Faculty of Health Sciences  
Dean of the Faculty of Science  
Dean of Graduate Studies  
Registrar – Secretary of Senate  
University Librarian

## Elected by the Faculties

### Faculty of Applied Sciences

M.F. Golnaraghi, May 31, 2011  
C. Sahinalp, May 31, 2012

### Faculty of Arts and Social Sciences

G. Dow, May 31, 2011  
E. Tiffany, May 31, 2010

### Faculty of Business Administration

M. Fizzell, May 31, 2012  
J. Francis, May 31, 2011

### Faculty of Communication, Art and Technology

A. Beale, May 31, 2012  
R. Woodbury, May 31, 2012

### Faculty of Education

N. Popadiuk, May 31, 2010  
D. vander Wey, May 31, 2011

### Faculty of Environment

(two vacancies)

### Faculty of Health Sciences

C. Janes, May 31, 2011  
J. Scott, May 31, 2010

### Faculty of Science

D. Leznoff, May 31, 2011  
T. Williams, May 31, 2010

## Elected by Faculty Members Jointly

T. Brennand, May 31, 2011  
G. Chapman, May 31, 2011  
S. Easton, May 31, 2010  
D. Hannah, May 31, 2010  
R. Gordon, May 31, 2011  
M. Joffres, May 31, 2011  
M. Laba, May 31, 2010  
G. Myers, May 31, 2012  
D. Paterson, May 31, 2012  
C. Pavsek, May 31, 2011  
P. Percival, May 31, 2012  
J. Peters, May 31, 2012  
P. Rubin, May 31, 2012  
R. Russell, May 31, 2012  
S. Thompson, May 31, 2010  
R. Wakkary, May 31, 2010

## Elected by Convocation

M. Letourneau, May 31, 2011  
J. McArthur, May 31, 2011  
C. Percival, May 31, 2011  
D. Warner, May 31, 2011

## Elected by Students

A. Bezglasnyy, May 31, 2010  
C. Chiu, May 31, 2010  
E. Funt, May 31, 2010  
E. Gibson, May 31, 2010  
A. Godson, May 31, 2010  
K. Harding, May 31, 2010  
G. Hiscocks, May 31, 2010  
S. Lee, May 31, 2010  
F. Li, May 31, 2010  
A. MacGrotty, May 31, 2010  
C. Moubarak, May 31, 2010  
A. Nadison, May 31, 2010  
C. Noble, May 31, 2010  
R. Patel, May 31, 2010  
J. Zelezny, May 31, 2010  
1 vacancy, May 31, 2010

## Administrative Officer

K. Ross, Registrar and Secretary of Senate

## Academic and Administrative Officials

### Chancellor

B.C. Louie BComm (Br Col), LLD (S Fraser), FCA

### President and Vice-Chancellor

M. Stevenson BA (Witw), MA (Mich), PhD (Northwestern)

### Provost and Vice-President, Academic

J.C. Driver MA (Camb), PhD (Calg)

### Vice-President, Advancement

C.A. Daminato, BSc (Qu), MBA (Br Col)

### Vice-President, Finance and Administration

P.M. Hibbitts BA (Tor), MBA (York, Can), EdD (S Fraser)

### Vice-President, Legal Affairs and University Secretary

J.A. Osborne LLB (Edin), MA (Tor), LLM (Br Col)

### Vice-President, Research

B.M. Pinto, BSc, PhD (Qu)

### Vice-President, University Relations

W.G. Gill, BA, MA, PhD (Br Col)

### Associate Vice-President, Academic and Associate Provost

W.R. Krane BA (Windsor), MA, PhD (York, Can)

### Associate Vice-President, Financial Services

M. Pochurko BBA (S Fraser), CGA

### Associate Vice-President, Research

N.H. Haunerland Diplom, PhD (Mün)

### Associate Vice-President, Students and International

N. Angerilli BSc, PhD (S Fraser)

### Dean of Applied Sciences

N. Rajapakse BSc (S Lanka), MEng, DEng (AIT), PEng

### Dean of Arts and Social Sciences

L. Cormack BA (Calg), MA, PhD (Tor)

### Dean of Business Administration

D.M. Shapiro BA (Calg), MA, PhD (Cornell)

### Dean of Communication, Art and Technology

C. Geisler BA (Carleton Coll), MS (W Illinois), PhD (Carnegie-Mellon)

### Dean of Continuing Studies (pro tem)

T. Nesbit BA (Open), MA (San Francisco State), PhD (Br Col)

### Dean of Education

K.C. Magnusson BEd, MEd (Regina), PhD (Alta)

### Dean of Environment

J.T. Pierce BA (Tor), MA (Wat), PhD (Lond)

### Dean of Graduate Studies

W.S. Parkhouse BPE (Alta), MPE, PhD (Br Col)

### Dean of Health Sciences

J. O'Neil BA, MA (Sask), PhD (Calif)

### Dean of Library Services and University Librarian

L. Copeland BSc (Tor), MA (Brandeis), MLS (Col)

### Dean of Science

M. Plischke BSc (Montr), MPhil (Yale), PhD (Yeshiva)

## Library

### Dean of Library Services and University Librarian

L. Copeland BSc (Tor), MA (Brandeis), MLS (Col)

### Associate University Librarian (Bennett Public Services) and Director, Student Learning Commons

E. Fairey BA, MA (Br Col), MLS (Tor)

### Associate University Librarian (Special Projects, Budget and Personnel)

T.M. Mundle BA, MLS (Br Col)

**470 Governing Bodies and Faculty**

*Associate University Librarian (Collections Services)*  
G. Bird BA (Cornell), MLS (Br Col)

*Associate University Librarian (Processing and Systems)*  
G.W.B. Owen BA (S Fraser), MLS (Br Col)

**Excellence in Teaching Awards****2008**

R. Iverson, Business Administration  
E. McCann, Geography  
P. Stella, Contemporary Arts

**2007**

V. Jungic, Mathematics  
G. McCarron, Communication  
M.L. Stewart, Women's Studies

**2006**

J. Bizzocchi, Interactive Arts and Technology  
S. Lavieri, Chemistry  
S. Richmond, Education

**2005**

A. Duncan, Business Administration  
P. St. Pierre, English  
J. Hyndman, Geography

**2004**

S. Verdun-Jones, Criminology  
P. Budra, English  
M. Leier, History

**2003**

H. Bai, Education  
Z.K. Punja, Biological Sciences  
C. Thong, Biological Sciences

**2002**

D. Wilson, Biological Sciences  
M. Dubiel, Mathematics  
A. Heard, Political Science

**2001**

M. Laba, Communication  
W. Cleveland, History  
T. McMullan, Biological Sciences

**2000**

C.R. Day, History  
G. Leach, Chemistry  
P. Howard, Communication

**1999**

J. Busumtwi-Sam, Political Science  
S. Holdcroft, Chemistry  
B. Truax, Communication

**1998**

L.M. Dill, Biology  
G. Poole, Psychology  
D. Zapfe, Contemporary Arts

**1997**

M.A. Jackson, Criminology  
J. Giltrow, English  
J.S. Craig, History

**1996**

A.L. Liestman, Computing Science  
S. Roberts, English  
D.A. Ross, Political Science

**1995**

C. Day, Resource and Environmental Management  
M. Moore, Biological Sciences  
H. Trotter, Physics

**1994**

J. Dahn, Physics  
A. MacKinnon, Education  
J. Sturrock, English

**1993**

G.J. Gries, Biological Sciences  
M. Manley-Casimir, Education  
D. Sutton, Chemistry

**1992**

L. Bolland, Economics  
M. Gates, Sociology and Anthropology  
S. Wendell, Women's Studies

**1991**

C. Banerjee, English  
R. Schwindt, Economics  
M. Wexler, Business Administration

**1990**

C.I. Dyck, History  
T. Grieve, English  
R.M. Peterman, Resource and Environmental Management

**1989**

N. Dyck, Sociology and Anthropology  
D. Krebs, Psychology  
R. Pomeroy, Chemistry

**1988**

A.S. Harestad, Biological Sciences  
N. Robinson, Education  
S. Wasserman, Education

**1987**

F. Fisher, Biological Sciences  
T. Kirschner, Languages, Literatures, and Linguistics  
R. Koepeke, History

**1986**

A. Aberbach, History  
R. Mathewes, Biological Sciences  
R. Menzies, Criminology

**1985**

R.H. Dunham, English  
K.N. Slessor, Chemistry

**1984**

R. Coe, English  
I. Gordon, Business Administration  
K. Silverman, Centre for the Arts

**1983**

M.J. Gresser, Chemistry  
L.M. Prock, Education

**1982**

P.E. Kennedy, Economics  
A. Lebowitz, English  
T.J. O'Shea, Education

**Endowed Chairs and Professors**

*Tom Buell BC Leadership Chair in Salmon Conservation and Management*  
J.D. Reynolds, Biological Sciences

*Burnaby Mountain Endowed Professors*

K. Akins, Philosophy  
D.W. Allen, Economics  
G.S. Anderson, Criminology  
P.B. Borwein, Mathematics  
C.B. Dean, Statistics and Actuarial Science  
M.F. Golnaraghi, Engineering Science  
R.R. Grauer, Business Administration  
M. Howlett, Political Science  
J. Martin, Psychology  
Z.K. Punja, Biological Sciences  
P.C. Ruben, Biomedical Physiology and Kinesiology  
M.L.W. Thewalt, Physics

*Jack and Nancy Farley University Professor in History*  
P.E. Dutton, Humanities

*Thelma Finlayson Professorship in Biological Control*  
J. Cory, Biological Sciences

*Forest Renewal BC Chair in Terrain Analysis and Forest Geoscience*

D. Stead, Earth Sciences

*Merck Frosst LEEF Chair in Pharmaceutical Genomics and Bioinformatics in Drug Discovery*  
R.N. Young, Chemistry

*Hellenic Canadian Congress of BC Chair in Hellenic Studies*

A. Gerolymatos, History, International Studies

*Stephen Jarislowsky Chair in Religion and Cultural Change*

T. Moustafa, International Studies

*LEEF Chair in Cognitive Neuroscience in Early Childhood Health and Development*

U. Ribary, Psychology

*Centre for North American Business Studies Professorship*

A. Vining, Faculty of Business Administration

*RBC Professor of Technology and Innovation*

B. Reich, Faculty of Business Administration

*RCMP Chair in Computational Criminology*

P.L. Brantingham, Criminology

*RCMP Chair in Crime Analysis*

P.J. Brantingham, Criminology

*Gordon M. Shrum Chair in Science*

S. Thompson, Statistics and Actuarial Science

*Simons Chair in International Law and Human Security*

J.T. Checkel, International Studies

*Telus Endowed Professorship*

R.G. Harris, Economics

*Weyerhaeuser Professorship in Change Management*

T.B. Lawrence, Business Administration

*J.L. Wighton Professor in Engineering*

A. Parameswaran, Engineering Science

*Ming and Stella Wong Endowed Chair in International Business*

R.L. Tung, Business Administration

*J.S. Woodsworth Chair in Humanities*

E. Stebner, Humanities

*Ruth Wynn Woodward Chair*

A. Cooper, Women's Studies

*Deana Wosk Professor in Art and Culture Studies*

L. Marks, Contemporary Arts

**Sponsored Chairs and Professors**

*Canada Research Chairs*

D.L. Baillie, Molecular Biology and Biochemistry

D. Bingham, Statistics and Actuarial Science

N.R. Branda, Chemistry

J.J. Clague, Earth Sciences

M. Collard, Archaeology

N. Dulvy, Biological Sciences

K. Egan, Education

E.G. Emberly, Physics

A.L. Feenberg, Communication

G. Flowers, Earth Sciences

B.D. Gates, Chemistry

D.J. Gromala, Interactive Arts and Technology

B. Kaminska, Engineering Science

M.E. Kelm, History

J. Kesselman, Public Policy

K. Kohfeld, Resource and Environmental Management

C.A. Lowenberger, Biological Sciences

I.P. McCarthy, Business Administration

J.J. McDonald, Psychology

B. Mohar, Mathematics

P. Mooney, Physics

W. Palen, Biological Sciences

C.K. Patton, Sociology and Anthropology, Women's Studies

R.M. Peterman, Resource and Environmental Management

S.N. Robinovitch, Biomedical Physiology and Kinesiology, Engineering Science

A.J. Robson, Economics

S.C. Sahinalp, Computing Science

J.K. Scott, Health Sciences  
 G. Tardos, Computing Science  
 G.F. Tibbits, Biomedical Physiology and Kinesiology  
 D.J. Vocado, Chemistry  
 C. Waddell, Health Sciences  
 J.R. Welch, Archaeology, Resource and Environmental Management  
 P.H. Winne, Education  
 S.C. Wright, Psychology  
 Y. Zhao, Communication

## Chancellors Emeriti

J. Segal LLD (S Fraser), CM, OBC  
 M.K. Wong BA (Br Col), LLD (S Fraser), CM

## Presidents Emeriti

J.P. Blaney BEd, MEd (Br Col), EdD (Calif)  
 W.G. Saywell BA, MA, PhD (Tor)

## Professors Emeriti

### A

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Cushley, R.J., Molecular Biology and Biochemistry 200

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 Funt, L., Chemistry 191

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 Huntley, D.J., Physics 203, 306

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 Johnston, H.J.M., History 115

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